COMVEC™

ON-HIGHWAY | OFF-HIGHWAY | DEFENSE

EVENT GUIDE
September 11-13, 2018
Rosemont, Illinois, USA

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# Event-at-a-Glance

## Tuesday, September 11

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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8–9 a.m.</td>
<td>Young Professionals Meet &amp; Greet</td>
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<tr>
<td>8:30–9 a.m.</td>
<td>Morning Coffee - Sponsored by Oshkosh</td>
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<tr>
<td>9–10 a.m.</td>
<td>Opening Ceremony &amp; Keynote - Troy Clarke, Chairman, President &amp; CEO, Navistar</td>
</tr>
<tr>
<td>10–10:30 a.m.</td>
<td>Networking Break in Exhibit Hall - Sponsored by Sears Seating</td>
</tr>
<tr>
<td>10:30 a.m.–Noon</td>
<td>CV Efficiency Symposium - Advanced Emission Regulations</td>
</tr>
<tr>
<td>10:30 a.m.–Noon</td>
<td>CV Efficiency Symposium - Total Vehicle Mechatronics and Integration Committee: Artifical Intelligence and Machine Learning</td>
</tr>
<tr>
<td>10:30 a.m.–Noon</td>
<td>Aerodynamics Committee - Organic Truck - Drag Reduction</td>
</tr>
<tr>
<td>10:30 a.m.–Noon</td>
<td>Manufacturing for the Next</td>
</tr>
<tr>
<td>Noon-1:30 p.m.</td>
<td>Lunch in Exhibit Hall</td>
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<tr>
<td>1:30–3 p.m.</td>
<td>CV Powertrain Efficiency - ICE</td>
</tr>
<tr>
<td>1:30–3 p.m.</td>
<td>Total Vehicle Mechatronics and Integration Committee: Connected Vehicles / Platooning</td>
</tr>
<tr>
<td>1:30–3 p.m.</td>
<td>Aerodynamics Committee - Full-Scale Assessments</td>
</tr>
<tr>
<td>1:30–3 p.m.</td>
<td>Where are We now and Should We Still be Paranoid-CyberSecurity?</td>
</tr>
<tr>
<td>3–3:30 p.m.</td>
<td>Networking Break in Exhibit Hall - Sponsored by Ricardo &amp; Young Professionals Speed Mentoring</td>
</tr>
<tr>
<td>3:30–5 p.m.</td>
<td>CV Efficiency Symposium - Electrified and Hybrid Powertrains</td>
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<tr>
<td>3:30–5 p.m.</td>
<td>Total Vehicle Mechatronics and Integration Committee: Autonomous / ADAS</td>
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<tr>
<td>3:30–5 p.m.</td>
<td>Aerodynamics Committee - Flow Interference</td>
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<tr>
<td>5–6:30 p.m.</td>
<td>Welcome Reception in Exhibit Hall - Sponsored by Eaton</td>
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## Wednesday, September 12

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<tr>
<td>8:30–9 a.m.</td>
<td>Morning Coffee</td>
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<tr>
<td>9–10 a.m.</td>
<td>Opening Keynote - Ranju Das, General Manager, Amazon</td>
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<tr>
<td>10–10:30 a.m.</td>
<td>Networking Break in Exhibit Hall - Sponsored by Allison Transmission</td>
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<tr>
<td>10:30 a.m.–Noon</td>
<td>Evolution of Big Data for Advanced Technology Symposium - Autonomous / ADAS</td>
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<tr>
<td>10:30 a.m.–Noon</td>
<td>CV Efficiency Symposium - Disruptive Technologies</td>
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<tr>
<td>10:30 a.m.–Noon</td>
<td>Aerodynamics Committee - Unsteady Flow</td>
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<tr>
<td>10:30 a.m.–Noon</td>
<td>Chassis Committee - CAE: Vehicle System Level Development</td>
</tr>
<tr>
<td>Noon-2 p.m.</td>
<td>Keynote &amp; Awards Lunch - Bill Driegert, Director, Uber Freight</td>
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<tr>
<td>2–3:30 p.m.</td>
<td>Evolution of Big Data for Advanced Technology Symposium - Connectivity / Connected Vehicles</td>
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<td>2–3:30 p.m.</td>
<td>Powertrain Committee - Student ICE Research Projects (MS and PhD Candidates)</td>
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<td>2–3:30 p.m.</td>
<td>Expert Panel Discussion: Managing Technology Disruptions</td>
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<td>2–3:30 p.m.</td>
<td>Chassis Committee - CAE: Vehicle Sub-system and Component Development</td>
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<tr>
<td>3:30–4 p.m.</td>
<td>Networking Break in Exhibit Hall &amp; Young Professionals Speed Mentoring</td>
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<tr>
<td>4–5:30 p.m.</td>
<td>Evolution of Big Data for Advanced Technology Symposium - Big Data, Analytics and CyberSecurity - “Upping the Game”</td>
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<td>4–5:30 p.m.</td>
<td>Powertrain Committee - Aftertreatment Panel</td>
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<td>4–5:30 p.m.</td>
<td>Expert Panel Discussion: Emerging Technology Standards</td>
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<td>4–5:30 p.m.</td>
<td>Chassis Committee - Uncertainty Quantification and Robust Design</td>
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<td>5:30–6:30 p.m.</td>
<td>Networking Reception in Exhibit Hall - Sponsored by Navistar</td>
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## Thursday, September 13

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<tr>
<td>8–8:30 a.m.</td>
<td>Buckendale Breakfast</td>
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<td>8:30–9:15 a.m.</td>
<td>Buckendale Lecture - Kirk T. Steudle, Director, Michigan Department of Transportation</td>
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<tr>
<td>9:30–10 a.m.</td>
<td>Networking Break</td>
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<tr>
<td>10–11:30 a.m.</td>
<td>Evolution of Big Data for Advanced Technology Symposium - Prognostics</td>
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<tr>
<td>10–11:30 a.m.</td>
<td>Powertrain Committee - Alternative Fuels and Propulsion Systems - EVs and Hybrids</td>
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<tr>
<td>10–11:30 a.m.</td>
<td>Expert Panel Discussion: History and Future of SAE/J1939</td>
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<tr>
<td>10–11:30 a.m.</td>
<td>Expert Panel Discussion: Disruption from Beyond - Outside Perspectives that May impact the CV industry</td>
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<tr>
<td>11:30 a.m.–12:30 p.m.</td>
<td>Networking / Grab &amp; Go Lunch</td>
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EMERGENCY PROCEDURES DURING COMVEC

During the event 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.

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 event, 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.

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Customer Service
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Attendees are permitted to bring camera equipment onto the show floor. Exhibitors retain the right to restrict photography of their products or displays and such decisions are within the discretion of the exhibitor and are not controlled by SAE International.

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COMVEC™
**INFORMATION**

**HOURS OF OPERATION**

**Registration**  
Grand Ballroom Foyer  
On-Site Registration hours:  
Tuesday, September 11  
7:30 a.m.– 4:30 p.m.  
Wednesday, September 12  
8:00 a.m.– 4:30 p.m.  
Thursday, September 13  
8:00 a.m.– 11:00 a.m.

**Member Lounge**  
Grand Ballroom Pre-Function  
Tuesday, September 11  
8:00 a.m.– 5:00 p.m.  
Wednesday, September 12  
8:00 a.m.– 5:00 p.m.  
Thursday, September 13  
8:00 a.m.– 12:00 p.m.

**Technical Display Hours**  
Grand Ballroom E, F, G, H  
Tuesday, September 11  
10 a.m.–6:30 p.m  
Wednesday, September 12  
10 a.m.–6:30 p.m.

**Speed Mentoring**  
SAE Member Lounge / Grand Ballroom Pre-Function  
Tuesday, September 11  
3:00-3:30 p.m.  
Wednesday, September 12  
3:30-4:00 p.m.

**Concierge Club**  
By Invitation Only  
Heathrow A-B  
Tuesday, September 11  
7:30 a.m.– 4:30 p.m.  
Wednesday, September 12  
8:00 a.m.– 4:30 p.m.  
Thursday, September 13  
8:00 a.m.– 11:00 a.m.

**Wifi Access**  
The Hyatt Regency O’Hare will have Wifi service throughout the meeting space. To access the wifi, search for HYATT-MEETING network and use SAE1013 as the password.

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**VISIT NAVISTAR’S COLLECTION OF ANTIQUE INTERNATIONAL TRUCKS**  
Thursday, September 13  
Noon – 3 p.m.

On Thursday, Navistar is offering a free bus ride and tour of its collection of more than 30 International trucks dating from 1907 to 1980.

Join company historian Tom Clark to see everything from an early truck with wagon wheels to cab-over models and Scouts. See a 1939 D-Series pickup re-envisioned as a hot rod with a 7.0-L diesel engine. Other highlights include a WWII U.S. military highway tractor and a 1920s Speed-Series truck with a wooden cab.

For more information and to register, visit:  
sae.org/attend/comvec/attend/navistar-tour
MEET THE NEW STANDARD OF UPTIME

Maximized uptime is the new benchmark in trucking, thanks to OnCommand® Connection, now standard in all new on-highway International® trucks.* Each factory-installed telematics device comes with a FREE 24-month service, which includes access to OnCommand Connection Advanced Remote Diagnostics, a set of tools designed to reduce downtime and increase your profitability.

To learn more about OnCommand Connection and the LT® Series visit InternationalTrucks.com/OCC.
GET INVOLVED WITH AN SAE TECHNICAL COMMITTEE
Grand Ballroom Foyer (near SAE Membership Lounge)
Wednesday, September 12
8 – 9:00 a.m.
Join us to meet with Committee chairs/vice chairs, ask questions, and learn more about the COMVEC Committees on Aerodynamics, Chassis, Powertrain, and Total Vehicle Mechatronics & Integration. Each Committee chair/vice chair will be available to answer any questions for prospective committee members.

KEYNOTE & AWARDS LUNCHEON
International Ballroom A-F
Wednesday, September 12
Noon – 2 p.m.

L. RAY BUCKENDALE LECTURE
Grand Ballroom A-C
Thursday, September 13
8 a.m. – Breakfast
8:30 – 9:15 a.m. – Lecture
Transformational Technologies Reshaping Transportation, a Government Perspective
Kirk T. Steudle, P.E., Director, Michigan Department of Transportation (MDOT), Niles Annelin, Transportation Policy Specialist, Asset Management and Policy Division Bureau of Transportation Planning

Sponsored by:

AWARDS AND RECOGNITIONS AT COMVEC

L. RAY BUCKENDALE LECTURE
Kirk T. Steudle
Director of the Michigan Department of Transportation

Niles Annelin
Manager of the Asset Management and Policy Section of the Michigan Department of Transportation

FOREST R. MCFARLAND AWARD
Lin Li
Senior Analysis and Simulation Engineer
Liebherr Mining Equipment Newport

SAE/AEM OUTSTANDING YOUNG ENGINEER AWARD
Stephen A. Lanahan
Design Engineer, Large Soil Compaction
Volvo Construction Equipment

SAE/MAGNUS HENDRICKSON INNOVATION AWARD
Oshkosh Global Product Development Team
Advanced Driver Assistance Systems
Making driving safer and more efficient

Continental, a leading global supplier of systems and components to mining, off-highway, agricultural and commercial vehicles, as well as for stationary power and industrial power applications, offers innovative Advanced Driver Assistance Systems (ADAS) to help both owner operators and fleet owners improve overall safety and security.

Advanced Driver Assistance Systems (ADAS) are an essential part of our vision of accident free driving. Continental ADAS technologies help drivers navigate modern hazards with quick, considerate actions, making driving safer and more efficient. ADAS solutions help drivers stay on top of things, acting as electronic copilots, to make driving effortless and stress-free.

Continental combines all of its expertise into a strong portfolio of technologies and components for Advanced Driver Assistance Systems including cameras, digital mirrors, radar, lidar, and more.

www.continental-corporation.com/en-us
KEYNOTE PRESENTATIONS

TUESDAY OPENING KEYNOTE – 9 a.m.
Grand Ballroom A-C

Troy Clarke
Chairman, President & CEO
Navistar, Inc.
“Disruptive Technologies: An OEM’s Perspective”

WEDNESDAY KEYNOTE – 9 a.m.
Grand Ballroom A-C

Ranju Das
Director
Amazon Rekognition
“How Amazon is helping businesses use Artificial Intelligence”

WEDNESDAY KEYNOTE & AWARDS LUNCHEON – 12 p.m.
International Ballroom A-F

Bill Driegert
Director,
Uber Freight
“Delivering Value Through Innovation”

THURSDAY BUCKENDALE LECTURE KEYNOTES – 8:30 a.m.
Grand Ballroom A-C

Kirk Steudle
Director
Michigan Department of Transportation (MDOT)

Niles Annelin
Transportation Policy Specialist
Asset Management and Policy Division
Bureau of Transportation

“Transformational Technologies Reshaping Transportation, a Government Perspective”
COMVEC POSTERS

Students and young engineers will be displaying posters in the exhibit hall on Tuesday and Wednesday. Stop by and visit to hear about their latest work.

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<tr>
<th>Title</th>
<th>Authors</th>
<th>Institution</th>
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<tr>
<td>Opportunities to Leverage Probe Data to Improve Commercial Vehicle Emissions, Safety, and Efficiency</td>
<td>Howell Li, Alexander H. Taylor, Purdue University</td>
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Poster abstracts available at sae.org/attend/comvec.
EXHIBITOR SPOTLIGHT AND NEW PRODUCT AND TECHNOLOGY SHOWCASE EXHIBIT HALL

The focus of this session is for exhibitors to discuss technology contained with their product and what pain point or problem does it solve for the customer. Each of the TED-like oral presentation will be 10 minutes in duration and presented during lunch or networking breaks on the exhibit floor.

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<tr>
<td><strong>Tuesday, September 11</strong></td>
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<tr>
<td>12:45 - 12:55 PM</td>
<td>Big Data Solution for Transportation Applications</td>
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<td></td>
<td>Jerry Chen, ETAS</td>
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<tr>
<td>1:00 - 1:10 PM</td>
<td>Smart Diagnostic Engines</td>
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<tr>
<td></td>
<td>Muzafar Moshref, Softing Automotive</td>
</tr>
<tr>
<td>1:15 - 1:25 PM</td>
<td>Evolution of the Perfect Driver? The Endless Journey to Autonomy</td>
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<td></td>
<td>Chad Harnish, dSPACE</td>
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<td>3:00 - 3:10 PM</td>
<td>The Diesel Laptops Difference</td>
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<tr>
<td></td>
<td>David Martin, Diesel Laptops</td>
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<tr>
<td>3:15 - 3:25 PM</td>
<td>Electric Vehicles: How Simulation can be used to Virtually Evaluate and</td>
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<td></td>
<td>Optimize Electric Powertrains for the Commercial Vehicle Industry</td>
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<td></td>
<td>Doug Hatfield, Dassault Systems SIMULIA</td>
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<tr>
<td>10:00 - 10:10 AM</td>
<td>Series Production Data Harvest</td>
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<td></td>
<td>Michael Doseck, daVinci Tech Group</td>
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<tr>
<td>10:15 - 10:25 AM</td>
<td>Camera/Sensor Cleaning System Using Heated Washer Fluid from SEEVA Technologies</td>
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<td>Derrick Redding, SEEVA</td>
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<td>3:30 - 3:40 PM</td>
<td>Thermal Management for Exhaust and After-treatment Systems</td>
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<td>Jim Hancock, Thermamax, Inc.</td>
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<td>3:45 - 3:55 PM</td>
<td>Supporting the New Era of Mobility</td>
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<td>John Zelasko, FEV</td>
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We are pleased to announce the addition of the Power Division into the KHL portfolio.

The KHL magazine portfolio...

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WEDNESDAY, SEPTEMBER 12

AUTONOMOUS/ADAS
10:30 a.m. – NOON

In this symposium, industry leaders will present perspectives on the state-of-the-art of autonomous and ADAS technologies. They will also discuss the evolution from today’s advanced driver assistance systems to higher levels of automation and opine on the hurdles and pitfalls that will need to be overcome. Similar to the interoperability of the multitude of systems - we will need to make sure that policies and regulations are common across states and possibly countries (North America) in order to ensure regulatory compliance.

MODERATOR
Daniel E. Williams, ZF
Richard Hanowski, Virginia Tech Transportation Institute

PANELISTS
Hidehiko Enomoto, Hino Motors, Ltd.
Ross Froat, American Trucking Associations
Andreas Johansson, Scania
Andrew Rekow, John Deere & Co.

CONNECTIVITY/CONNECTED VEHICLE
2 – 3:30 p.m.

Connectivity brings about a rapid increase in data intake during the engineering phase of new vehicles, which in turn leads to opportunities as well as challenges in data security, analysis methods, IT infrastructure, to name a few. The panel for this session discusses the various technologies, standards, and possibilities for services and vehicle efficiency improvements. It also covers the current and future challenges such as cyber security and data exchange that the current and future V2X technologies bring with them.

MODERATOR
Stephan Tarnutzer, FEV

PANELISTS
Charles Conway, John Deere
Greggory Garrett, CGS Advisors
Phill Lawson-Shanks, Edge ConneX
Micha Muenzenmay, Bosch
Sanjay Ravi, Microsoft

BIG DATA, ANALYTICS, AND CYBER SECURITY – “UPPING THE GAME”
4 – 5:30 p.m.

Big data and analytics are showing promise with improving cyber security. Of course, there are still many challenges as new cyber security threats are popping up daily. Cyber security needs the risk management and actionable intelligence that is common from big data analysis. While it is great to have tools that can analyze data, the key is to automate tasks so that the data are available more quickly and the analysis is sent to the right people on time. To this point, Big data will also help analysts to visualize cyberattacks by taking the complexity from various data sources and simplifying the patterns into visualizations. Come hear Cyber Experts talk about the challenges and opportunities in utilizing Big Data for improving Cyber Security for the Commercial Vehicle Industry.

MODERATOR
Gloria D’Anna, General Telecom Systems

PANELISTS
Ryan Brander, GEOTAB
Vince Crisler, Dark Cubed Inc.
Tamas Cser, Functionize
Richard Enbody, Michigan State University
Simon Hartley, RunSafe Security Inc.
Mark Zachos, DG Technologies

THURSDAY, SEPTEMBER 13

PROGNOSTICS
10 – 11:30 a.m.

Diagnostics have been around for a long time and are well understood and standardized. Huge amounts of diagnostic data have piled up over the years. Many variants and dimensions must be supported. Fortunately, the data is machine readable. This presentation gives an overview of the evolution of big data techniques to promote prognostic development and shows some case studies for the next generation of prognostics development.

MODERATOR
Mark N. Pope, DG Technologies

PANELISTS
Phil D’Eon, Casebank Technologies Inc.
Andreas Hege, RA Consulting GMBH
Troy Schilling, Robert Bosch LLC
Evandro Silva, Volvo Trucks North America
Peter Subke, Softing Automotive Electronics GmbH
Cybersecurity for all segments of the commercial vehicle industry requires comprehensive solutions to secure networked vehicles and the transportation infrastructure. Written by leading experts and pioneering engineers, this upcoming publication provides entry so everyone will quickly understand the cybersecurity field while providing technical insights into how vehicles could be at risk to a cyber-attack.

Ready to order online? Visit books.sae.org/r-464

Meet the Author at the COMVEC™ Technology Connection!

Where are We Now and Should We Still be Paranoid - CyberSecurity - Gloria D’Anna and Marc Leduc - Coverage on new Cybersecurity for Commercial Vehicles Book and the Contributors

Tuesday 9/11/2018
London Room, 12PM – 1PM

Enjoy light refreshments with Gloria D. D’Anna and some of the experts who contributed to the book to discuss cybersecurity trends and insights.

Learn more about SAE publications at books.sae.org
**SYMPOSIA TRACKS**

COMMERCIAL VEHICLE EFFICIENCY SYMPOSIUM

Grand Ballroom A-C

**TUESDAY, SEPTEMBER 11**

**ADVANCED GLOBAL EMISSION REGULATIONS**

10:30 a.m. – Noon

This panel will discuss global heavy-duty, on-road and non-road emissions regulations, including the compliance mechanisms used around the world. There will be a particular focus on California and the emerging markets. The high-level technical challenges and diverse potential solutions different regions are employing associated with regulations, compliance, fuels and test methodologies will also be included.

**MODERATOR**

Timothy Johnson, Corning Inc. (ret)

**PANELISTS**

Anup Bandivadekar, International Council On Clean Transport
Jason Quaranto, Navistar
William Robertson, California Air Resources Board
Matthew W. Spears, Engine Manufacturers Association
Lukas Walter, AVL LIST GmbH

**ICE POWERTRAIN EFFICIENCY**

1:30 – 3 p.m.

Commercial vehicle and internal combustion engines have seen significant improvements over past years, but recent stringent requirements to meet phase-II GHG and emissions standards further pushed the boundaries that requires improvement in ICE powertrain efficiency and Aftertreatment technologies. The adoption of these new technologies depends upon the commercial feasibility that includes system / operating cost, reliability and customer adaptation to such powertrain features. The possible low NOx requirements will further require enhancement in aftertreatment technologies, control strategies and integration challenges with powertrain system. This symposium seeks to explore the approaches to technologies that improve the ICE efficiency, emission solutions and market readiness to accept such Powertrain solution.

**MODERATOR**

Jonathon White, Cummins Inc.

**PANELISTS**

Michael Franke, FEV North America Inc.
Philip Fehn Gronberg, CNH Industrial
Brent D. Keppy, Robert Bosch LLC
Philip W. Stephenson, PACCAR Technical Center
Christian Weiskirch, Volkswagen Truck & Bus

**ELECTRIFIED AND HYBRID POWERTRAINS**

3:30 – 5 p.m.

Commercial vehicle and equipment powertrains have seen many changes over the past decades, however one of the most significant changes will be the broad-based adoption of hybridization and electrification. These new powertrains present many challenges to industry including, the system integration with conventional IC engines, emissions compliance across operating cycles, supporting infrastructure for charging, and service and maintenance. This symposium seeks to explore the approach of OEM’s from different segments, discuss their approach to the challenges and the unique aspects of the multiple applications.

**MODERATOR**

Dimitri N. Kazarinoff, AVL North America Inc.

**PANELISTS**

Tom Dollmeyer, Cummins Inc.
Mihai Dorobantu, Eaton Vehicle Group
Darren Gosbee, Navistar Inc.
Randy Sumner, Aptiv

**WEDNESDAY, SEPTEMBER 12**

**DISRUPTIVE TECHNOLOGIES**

10:30 a.m. – Noon

This panel will investigate the impacts of disruptive technologies on the national infrastructure. Topics for discussion include: impediments to creating the infrastructure (political, economic, timing; required infrastructure improvements; status of the electric grid; and fuel supply, including natural gas. This panel will not delve into the actual technology details, those are topics for the technical committees.

**MODERATOR**

Steven Sokolsky, CALSTART

**PANELISTS**

Michael Berube, U.S. Department of Energy
Scott Phillippi, UPS
Charles A. Silio, Agility Fuel Systems
Wolfgang Warnecke, Shell Global Solutions
TUESDAY, SEPTEMBER 11

TOTAL VEHICLE MECHATRONICS AND INTEGRATION COMMITTEE: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING
10:30 a.m. – Noon

It is a fascinating time for the transport industry as Artificial Intelligence (AI) applications are taking center stage in R&D. One thing for certain is that artificial intelligence will play a very important role in shifting the current landscape of the transport industry, by going above and beyond what the human brain alone can do. The race is long and many challenges must be faced to come up with safe, viable, and robust systems.

MODERATOR
Parvate-Patil Girish, Caterpillar

PANELISTS
Ron Demcko, AVX
Nolan Finch, Caterpillar
Joe Verrengia, Arrow Electronics

TOTAL VEHICLE MECHATRONICS AND INTEGRATION COMMITTEE: THE REVOLUTION OF HIGHLY AUTOMATED COMMERCIAL VEHICLES: SHAPING THE EVOLUTION OF TODAY’S TRUCKS TO HELP DRIVERS DELIVER VALUE
3:30 – 5 p.m.

ADAS Technology is becoming a norm in trucking because of the high potential to reduce risk and keep drivers safe. With these technologies, the development of highly automated commercial vehicles is possible. The discussions in this panel will highlight the challenges and opportunities of technology developers as they tackle this complex topic.

MODERATOR
Brendan Chan, Navistar Inc.

PANELISTS
Daniel Aceituna, DISTek Integration Inc.
Jace Allen, dSPACE Inc.
Dan Cowan, Velodyne LiDAR
Fabian Jorg Uwe Koark, Invensity Inc.
Dan Lehman, Smart Drive

TOTAL VEHICLE MECHATRONICS AND INTEGRATION COMMITTEE: CONNECTED TECHNOLOGY: DELIVERING VALUE IN FUTURE COMMERCIAL VEHICLES WITH CONNECTIVITY AND ADVANCED SHARED SERVICES
1:30 – 3 p.m.

Connected vehicles are being discussed everyday including platooning and ADAS. These technologies are starting to converge as the commercial vehicle industry looks to improve both fleet and vehicle efficiency while improving safety. This panel will discuss the challenges and opportunities of today and tomorrow’s innovators as they faced the technologies head-on to realize the future.

MODERATOR
Ethan Seifer, Cummins Inc.

PANELISTS
Andrew Dondlinger, Navistar
Robert Brown, TuSimple
Boris Kort-Packard, FedEx Express
CHASSIS COMMITTEE EXPERT PANEL DISCUSSIONS
London Room

WEDNESDAY, SEPTEMBER 12
CAE VEHICLE SYSTEM LEVEL DEVELOPMENT
10:30 a.m. – Noon

This panel will focus on whole vehicle system level performance development using CAE tools. Topics could include but not limited to:
• How are the customers’ voice cascaded to vehicle performance?
• How are the vehicle system-level performances cascaded to sub-systems?
• How are the various vehicle system performances balanced and optimized?

MODERATOR
Xiaobo Yang, Oshkosh Corporation

PANELISTS
Carlos Agudelo, Link Engineering Co.
Stefano Cassara, Navistar
Marle Fernandes, The Timken Company
Amandeep Singh, US Army TARDEC

CAE VEHICLE SUB-SYSTEM AND COMPONENT DEVELOPMENT
2 – 3:30 p.m.

This panel will focus on vehicle sub-system and component level performance development using CAE tools. Topics could include but not limited to:
• How to ensure the organic integration of sub-system development with the whole vehicle system?
• How are the sub-system-level performances cascaded to components?
• How to develop a sub-system bench testing?
• How to ensure the organic integration of components development with the whole vehicle system?
• How to determine the load cases for components?
• How to develop a component bench testing?

MODERATOR
Lin Li, Liebherr Mining Equip Newport News Co.

PANELISTS
Fei Ding, Hunan University
Pieter Schalk Els, Universiteit Van Pretoria
Keven Hofstetter, Caterpillar Inc.
Zhigang Wei, Tenneco Inc.

UNCERTAINTY QUANTIFICATION AND ROBUST DESIGN
4 – 5:30 p.m.

This panel will focus on the uncertainty quantification along with vehicle development using CAE tools. Topics could include but not limited to:
• Benchmarking the uncertainties for vehicle and sub-system levels
• Vehicle robust development
• Proving ground test run-to-run variations

MODERATOR
Zachary Graves, SmartUQ LLC

PANELISTS
Diego Galindo, Caterpillar Inc.
Nicholas J. Gaul, Ramdo Solutions
David A. Lamb, US Army TARDEC
Brian Leyde, SmartUQ
Corina Sandu, Virginia Tech.
Powertrain Committee Expert Panel Discussions

Grand Ballroom A-C

Wednesday, September 12

Current ICE Research Projects
2 – 3:30 p.m.

The SAE Powertrain Committee is organizing this session to profile student research projects, with regard to internal combustion engines. Submissions were invited from both MS and PhD candidates. Topics to be addressed may include: Air handling, Combustion, Friction reduction, Controls, Waste Heat Recovery, and Alternative Fuels.

Session Sponsored by:

Moderator
Russell J. Truemner, AVL Powertrain Engineering Inc.

Panelists
Flavio Dal Forno Chuahy, Cummins Inc.
Dheeraj Gosala, Purdue University
Tim Kroeger, Texas A&M Univ.
Meng Tang, Michigan Technological University

Aftertreatment Panel
4 – 5:30 p.m.

Disruptive technologies are affecting the commercial vehicle industry from all directions, by presenting both challenges and solutions. From an aftertreatment perspective, perhaps the most disruptive technologies are those that result from the new emissions regulations for 2024 and beyond. In addition, it is clear that after well over half a century, fuel cell/battery technologies will finally be on a path to large-scale commercialization in hybrid and fully electric vehicles. So, with a future of electrification unfolding before our eyes, what is the future for aftertreatment technology for heavy-duty diesel engines?

In this session, we will address the vision for the future that includes an important role for aftertreatment technology; the regulatory standards that necessitate the development of disruptive technologies in order to meet the OBD challenges; the corresponding requirement for advances in sensor technology; and the obligatory catalyst developments to meet future needs. The goal is to share our insight and walk away with a more enlightened perspective on how to harness disruptive technologies for effective emissions control.

Thursday, September 12

Alternative Fuels and Propulsion Systems - EVS and Hybrids
10 – 11:30 a.m.

This panel session is intended bring together experts in the area to discuss the recent developments in the application of Alternative Fuels and Propulsion Systems with a look into the technical challenges associated with electric & hybrid commercial vehicles. Fuel costs are an ongoing concern and reduction of greenhouse gas emissions have introduced new challenges; Consequently, Alternative Fuels and Propulsion Systems are ever more important. Establishing a dialogue on the challenges that are faced and opportunities that are present will enhance the technical development in this area.

Moderator
Shawn Ray, Forensic Engineering Technologies LLC

Panelists
Alan Mace, Ballard Power Systems Inc.
Aymeric Rousseau, Argonne National Lab
Heimo Schreier, AVL LIST GmbH
AERODYNAMICS COMMITTEE EXPERT PANEL DISCUSSIONS
Paris Room

TUESDAY, SEPTEMBER 11
ORGANIC TRUCK - DRAG REDUCTION
10:30 a.m. – Noon

To continue improving the aerodynamic drag level of heavy duty vehicles, the development of corresponding drag reduction devices is being pushed towards new performance boundaries. This session presents new insights and innovations containing flexible aerodynamic surfaces.

MODERATOR
Gandert Van Raemdonck, Wabco

PANELISTS
Alexander Epstein, Volpe Natl Transportation Systems Center
Brian R. McAuliffe, National Research Council Canada
Jeff Smith, PACCAR Inc.

FULL-SCALE ASSESSMENTS
1:30 – 3 p.m.

Quantifying the operational aerodynamic performance of a vehicle or a component to a high degree of certainty has driven the engineering and testing community to a greater reliance on full-scale assessment methods that satisfy the dynamic similitude criteria. This session will explore the potential of both experimental and computational methods as well as advanced instrumentation required to fully capture the fundamental phenomena influencing vehicle aerodynamic performance.

MODERATOR
Raj Nair, Exa Corporation

PANELISTS
Mark Masoud Doroudian, ESI North America
Julie Hawkins, U.S. EPA
Gandert Van Raemdonck, Wabco

OPTIMIZING MULTI-VEHICLE FLOW INTERFERENCE
3:30 – 5 p.m.

The drive to understand the effect of multiple vehicles travelling together has accelerated in recent times. This session contains results and analysis from a range of tools encompassing on-road data, water tanks and computer simulation to increase discussion in this area.

MODERATOR
Andrew Mosedale, Auto Research Center LLC

PANELISTS
Brian R. McAuliffe, National Research Council Canada
John Nuszkowski, Univ. of North Florida
Gandert Van Raemdonck, Wabco

WEDNESDAY, SEPTEMBER 12
UNSTEADY FLOW
10:30 a.m. – Noon

While driving on the road vehicles are experiencing transient flow behavior. This session will cover operational effects of changing flow field in and around the vehicle. Some applicable topics for the session include tire splash and spray, wind buffeting, vehicle stability under changing flow field and time-averaging techniques.

MODERATOR
Ilhan Bayraktar, General Electric Aviation

PANELISTS
Devaraj Dasarathan, Exa Corporation
Brian R. McAuliffe, National Research Council Canada
Andrew Mosedale, Auto Research Center LLC
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EXPERT PANEL DISCUSSIONS
London Room

TUESDAY, SEPTEMBER 11
MANUFACTURING FOR THE NEXT
10:30 a.m. – Noon

Advances in Medium and Heavy-Duty technologies coupled with a changing business model are profoundly changing the players, the marketplace, and the way vehicles and their components are designed and manufactured. What does this mean for the factory? How does this change the business model and the footprint? What does this mean for automation technologies and processes? How does AI and sensing fit in? What is needed in order to make this digital transformation a reality? How do we pivot to the new “next”? Join our panel discussion of mobility industry and technical experts as we discuss the roadblocks, the requirements, and the future of manufacturing.

MODERATOR
Monika Minarcin, Accenture

PANELISTS
Karthik Gopalakrishnan, Robert Bosch
Andrew Hopkins, Accenture
Adrian Jennings, Ubisense Inc.
Rodney Rusk, Bosch Rexroth

THURSDAY, SEPTEMBER 13
COMMERCIAL VEHICLE INDUSTRY DISTRUPTION PANEL
10 – 11:30 a.m.

New technologies are revolutionizing commercial vehicles, but are we simply substituting the new technology for the old, assuming the industry structure will remain similar. New business models are using big data to change product distribution. Will drones be doing deliveries? Will some products be printed and minimize the distribution system? Will there be a place for individual owners/operators? We have assembled a panel to speak to these issues and the new ways disruption may impact us.

MODERATOR
Frederick M. Cartwright, PRUV Mobility Ecosystem

PANELISTS
Carla Bailo, Center for Automotive Research
Tony Kriech, Heritage Environmental Services
Mike Stankard, Aon Risk Solutions

WHERE ARE WE NOW AND SHOULD WE STILL BE PARANOID-CYBERSECURITY?
1:30 – 3 p.m.

During the past few years, vulnerabilities of commercial vehicles were demonstrated that allow denial-of-service attacks and even safety-critical attacks which is of great concern to the US economy. This panel will discuss recent advancements in the space of commercial vehicle cybersecurity. The panel will also address potential risks and available protection methodologies, discuss existing industry-wide collaboration efforts, and the potential for further collaboration and standardization & what’s next.

MODERATOR
Gloria D’Anna, General Telecom Systems Inc.

PANELISTS
Doug Britton, RunSafe Security Inc.
John Chandy, University of Connecticut
Karl Heimer, Heimer And Associates
Larry Hilkene, Cummins Inc.
Suzanne Lightman, National Institute of Standards & Technology
Lee Slezak, U.S. Dept. of Energy
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SAE STANDARDS EXPERT PANEL DISCUSSIONS
Paris Room

WEDNESDAY, SEPTEMBER 12
STANDARDS ROLE IN MANAGING TECHNOLOGY DISRUPTIONS
2 – 3:30 p.m.

Standards development strategy and partnership between SAE, regulators, and the commercial vehicle industry will be the focus of these discussions. The panel will provide a vision into the processes used to identify critical need and establish guidelines that lead to the development of standards required for the maturation and implementation of critical disruptive technologies.

MODERATOR
Richard Wood, SOLUS Solutions and Technologies LLC

PANELISTS
Vivek Sujan, Cummins Inc.
Richard Wood, SOLUS Solutions and Technologies LLC

EMERGING TECHNOLOGY STANDARDS
4 – 5:30 p.m.

Join standards development leaders as they discuss the working strategies used to identify and develop specific standard documents that support the industry adoption of emerging technologies. Specific topic areas to be discussed related to current and future standards development activities are: braking, active safety systems, automated vehicles, aerodynamics, fuel economy, human factor and crashworthiness.

MODERATOR
Ilhan Bayraktar, General Electric Aviation

PANELISTS
Ilhan Bayraktar, General Electric Aviation
David Ganson Engelbert, Haldex Brake Products
Stephen C. Spata, NTEA

THURSDAY, SEPTEMBER 13
HISTORY AND FUTURE OF SAE J1939
10 – 11:30 a.m.

Join these panelists, as they celebrate 25 years of use for J1939 standard and contemplate the future of J1939 in light of disruptive technologies including Functional Safety, Advanced Driver Systems, Cybersecurity and CAN FD. PART I will focus on the selection of CAN as the communication technology, and celebrate the achievements attained. Part II looks at progress in functional safety, in advance of ISO 26262, cybersecurity, advanced driver systems, and the adoption of CAN FD.

MODERATOR
Eric Swenson, Navistar Inc.

PANELISTS
Franklin Josey, Volvo Trucks North America
Michael Lyons, Caterpillar Inc.
Eric Swenson, Navistar Inc.
Exhibitor New Product and Technology Showcase
EXHIBITOR PROFILES
Exhibitor Directory text is published as submitted by exhibiting companies.

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SAE Mini Baja: The Mini Baja team designs and builds a single-seat all-terrain vehicle for competition. The car is designed with a 10-horsepower engine as well as with creative chassis, suspension and drive train.
EXHIBITOR PROFILES

Purdue University – West Lafayette

Booth 304

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SAE Mobility History Committee
First Division Museum

Booth 314

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<td>Continental Automotive Systems Inc.</td>
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<tr>
<td>daVinci Technology Group Inc.</td>
<td>309</td>
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<td><a href="http://www.zuragon.com">www.zuragon.com</a></td>
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<td>Diesel Progress</td>
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<td>Siemens</td>
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<td>Volvo Construction Equipment</td>
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</table>
## SAE International Events

### 2018

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intelligent and Connected Vehicles</td>
<td>August 14-15</td>
<td>Kunshan City, Jiangsu, China</td>
</tr>
<tr>
<td>Connect2Car™ Executive Leadership Forum</td>
<td>September 5-6</td>
<td>Las Vegas, NV</td>
</tr>
<tr>
<td>SAE New Energy Vehicle Forum</td>
<td>September 11-12</td>
<td>Shanghai, China</td>
</tr>
<tr>
<td>COMVEC™</td>
<td>September 11-13</td>
<td>Rosemont, IL</td>
</tr>
<tr>
<td>On-Board Diagnostics</td>
<td>September 11-13</td>
<td>Indianapolis, IN</td>
</tr>
<tr>
<td>North American International Powertrain</td>
<td>September 12-14</td>
<td>Chicago, IL</td>
</tr>
<tr>
<td>Conference</td>
<td>Noise and Vibration Forum</td>
<td>September 13</td>
</tr>
<tr>
<td></td>
<td>International Powertrains, Fuels &amp; Lubricants Meeting</td>
<td>September 17-19</td>
</tr>
<tr>
<td></td>
<td>From ADAS to Automated Driving</td>
<td>October 9-11</td>
</tr>
<tr>
<td></td>
<td>Transmission and Driveline Technologies</td>
<td>October 9-10</td>
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<tr>
<td></td>
<td>Co-Optimization of Fuels and Engines</td>
<td>October 9-10</td>
</tr>
<tr>
<td></td>
<td>Thermal Management Systems Symposium</td>
<td>October 9-11</td>
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<tr>
<td></td>
<td>Brake Colloquium &amp; Exhibition</td>
<td>October 14-17</td>
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<tr>
<td></td>
<td>Heavy Duty Diesel Emissions Control</td>
<td>October 16-17</td>
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<tr>
<td></td>
<td>SAE/JSME Small Engine Technology Conference</td>
<td>November 6-8</td>
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<td></td>
<td>Aerospace Systems + Technology Conference</td>
<td>November 6-8</td>
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<tr>
<td></td>
<td>Defense Maintenance and Logistics Exhibition</td>
<td>December 17-19</td>
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<td>DoD Maintenance Symposium</td>
<td>December 17-20</td>
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### 2019

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tr>
<td>Connect2Car™ at CES</td>
<td>January 8</td>
<td>Las Vegas, NV</td>
</tr>
<tr>
<td>International Powertrains, Fuels &amp; Lubricants Meeting</td>
<td>January 22-24</td>
<td>San Antonio, TX</td>
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<tr>
<td>Hybrid and Electric Vehicle Technologies</td>
<td>February 19-21</td>
<td>Anaheim, CA</td>
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<tr>
<td>On-Board Diagnostics</td>
<td>March 12-14</td>
<td>Stuttgart, Germany</td>
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<tr>
<td>SAE AeroTech Americas</td>
<td>March 26-28</td>
<td>Charleston, SC</td>
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<tr>
<td>Government/Industry Meeting</td>
<td>April 3-5</td>
<td>Washington, DC</td>
</tr>
<tr>
<td>High Efficiency IC Engine</td>
<td>April 7-8</td>
<td>Detroit, MI</td>
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<tr>
<td>WCX™: SAE World Congress Experience</td>
<td>April 9-11</td>
<td>Detroit, MI</td>
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<tr>
<td>Connect2Car™ at WCX</td>
<td>April 9-11</td>
<td>Detroit, MI</td>
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<tr>
<td>Noise and Vibration Conference &amp; Exhibition</td>
<td>June 10-13</td>
<td>Grand Rapids, MI</td>
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<tr>
<td>International Conference on Icing of Aircraft, Engines, and Structures</td>
<td>June 17-21, 2019</td>
<td>Minneapolis, MN</td>
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<tr>
<td>JSAE/SAE International Powertrains, Fuels &amp; Lubricants Meeting</td>
<td>August 25-29</td>
<td>Kyoto, Japan</td>
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<tr>
<td>COMVEC™</td>
<td>September 10-12</td>
<td>Indianapolis, IN</td>
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<tr>
<td>On-Board Diagnostics</td>
<td>September 17-19</td>
<td>Garden Grove, CA</td>
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<tr>
<td>North American International Powertrain Conference</td>
<td>September 18-20</td>
<td>Chicago, IL</td>
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<tr>
<td>Brake Colloquium &amp; Exhibition</td>
<td>September 22-25</td>
<td>Orlando, FL</td>
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<tr>
<td>SAE AeroTech Europe</td>
<td>September 24-26</td>
<td>Bordeaux, France</td>
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<tr>
<td>Thermal Management Systems Symposium</td>
<td>October 15-17</td>
<td>Plymouth, MI</td>
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For an updated listing of events, dates and locations, please refer to [sae.org/events/](https://sae.org/events/)
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