SAFETY AND ACCIDENT RECONSTRUCTION TECHNOLOGY
EDUCATION & TRAINING GUIDE

March – December 2014

FEATURED COURSES
• Injuries, Anatomy, Biomechanics & Federal Regulation Seminar — Page 3
• NEW! Developing In-Vehicle User Interfaces: Design Principles and Techniques Seminar — Page 14
• Overview and Impact of the Automotive Functional Safety Standard ISO 26262 Webinar — Page 18

training.sae.org
EDUCATION & TRAINING FOR SAFETY & ACCIDENT RECONSTRUCTION TECHNOLOGY

Here’s your first issue of the *SAE International Safety and Accident Reconstruction Technology Education and Training Guide*. To make sure that you are informed and up-to-date on all of the training and education SAE offers related to Safety, Accident Reconstruction, and Occupant Safety technology, we are featuring the entire portfolio of scheduled and on demand courses in one guide delivered directly to you. For the first-time, all current classroom and live online offerings are included with a list of all the dates and locations scheduled throughout the year. You will also find information on courses that are available online and on demand – learning when you want it.

PLUS as the society dedicated to mobility engineering, ONLY SAE offers a comprehensive course portfolio with seminars, workshops, webinars, and on demand e-Learning covering the subjects critical to your career growth and the growth of the industry.

LIFELONG LEARNING. SAE International is a global association committed to being the ultimate knowledge source for the mobility engineering professional. By uniting over 135,000 engineers and technical experts, we drive knowledge and expertise across a broad spectrum of industries. We act on two priorities: encouraging a lifetime of learning for mobility engineering professionals and setting the standards for industry engineering.

SAE International is the world’s leader in mobility engineering knowledge. We are trusted by engineers and other professionals around the globe to provide a broad, multi-sector source for information and solutions. The SAE International Professional Development program offers access to over 300 live online and classroom, and online, on demand learning opportunities—learning opportunities that supply the right content to help solve your specific challenges.

Mylearn.SAE.ORG
Access your SAE education and training transcripts, and plan and schedule future training.
A LEARNING FORMAT TO FIT EVERY NEED

As the world’s leader in offering access to the most extensive, multi-sector source of knowledge and expertise, SAE International provides the mobility engineering training and education needed to turn your challenges into solutions.

What is your learning need?
SAE International offers a variety of learning formats to accommodate diverse learning styles. Explore classroom, live and online, and online and on demand courses.

Many courses are offered in multiple formats to fit your exact need. Be sure to watch for the icons that identify the format available for each course.

Seminars or workshops available as similar live, online webinars or online and on demand courses, will feature icons and information about the schedule and fees for all platforms.

CATALOG KEY
You will see the following icons with the course descriptions.
These icons indicate:
• Delivery formats available for the course
• That the course is part of a certificate program
• That this course is ACTAR Approved

Many courses are available in multiple formats. In addition to finding courses that fit your technology need, look for courses with icons that fit the way you want to learn.

CLASSROOM
indicates that course is an instructor-led seminar or workshop offered in a classroom setting

LIVE, ONLINE
indicates this course is an instructor-led webinar offered live and online via telephone and internet connection

ONLINE, ON DEMAND
These offerings are available online anytime the participant would like to access the course through the internet

CERTIFICATE
This icon indicates that this course is part of an SAE International curriculum-based, multi-course certificate.

ACTAR LOGO
This icon indicates the course is an ACTAR approved course. For more information on ACTAR and ACTAR accredited courses, visit training.sae.org/seminarsinfo/actar/

As an IACET Authorized Provider, SAE International offers CEUs for its programs that qualify under the ANSI/IACET Standard.
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We do our best to schedule live learning offerings as far in advance as possible to help you better plan your training needs. The information in this resource guide reflects the most accurate information available at the time of publication. Rarely, unforeseen circumstances may force a change in the live learning schedule. For the most up-to-date listing of scheduled offerings visit training.sae.org/all/bydate. SAE International reserves the right to cancel courses and cannot be held responsible for costs incurred beyond registration fees.
Safety continues to be one of the most important factors in motor vehicle design, manufacture and marketing. This seminar provides a comprehensive overview of these critical automotive safety considerations: injury and anatomy; human tolerance and biomechanics; occupant protection; testing; and federal legislation. The knowledge shared at this seminar will enable you to be more aware of safety considerations and to better understand and interact with safety experts.

**LEARNING OBJECTIVES**

By attending this seminar, you will be able to:

- Recognize the significance of various injuries, how to rank order and quantitatively compare their severity, and how to access overall severity of multiple injuries.

- Assess the significance of various test results, know their basis and how to interpret them.

- Identify the biomechanical and legal basis of safety regulations and their changes (especially FMVSS 208 and 214).

- Describe the different measuring capabilities of various test dummies including Hybrid III test dummies.

- Contrast the difference between impact and deceleration injuries for various body regions and explain the “third collision,” which takes place within the vehicle.

**WHO SHOULD ATTEND**

All professionals who are involved either directly or indirectly with vehicle safety performance.

**CONTENT HIGHLIGHTS**

- Next Generation Restraint Systems
- Injury Diagnostic Images of Injuries -- Plain Film X-rays, CT, MRI
- The Role of Alcohol
- Anatomy, Injuries and Tolerance Parameters
- Test Devices
- FMVSS 201, 208, 214 and NCAP and LINCAP -- Current & Proposed Injury Criteria and their Biomechanical Basis
- Regulatory Process
- Assessing Pre-existing Conditions and Previous Injury
- Older Drivers - Special Needs

**INSTRUCTOR**

Jeffrey A. Pike
President, Biomechanics Consulting, Inc. and Adjunct Professor, Biomedical Engineering, Wayne State University

**“Stimulating, comprehensive overview covering all aspects of injury, anatomy, biomechanics and federal regulations.”**

Barbara Hartline
Product Engineer
Ford Motor Company

**I.D.# 85049**

**SCHEDULE**

April 7-9, 2014
Detroit, Michigan
*Held in conjunction with the SAE 2014 World Congress*

October 15-17, 2014
Troy, Michigan

**FEES**

List: $1,615  
Members: $1,445  
Premium: $1,365  
Elite: $1,285

**ONE-DAY/.7 CEUS**

Get the complete course description and register:
training.sae.org/seminars/85049
Recent advances in commercial vehicle equipment have increased the potential for incident-related data to be recorded surrounding a collision event. What some have called a “black box” is more properly referred to as a Heavy Vehicle Event Data Recorder (HVEDR) as defined by the SAE J2728 HVEDR Recommended Practice. The term HVEDR is used to describe any type of electronic function that has the capability of storing data surrounding a defined event within an electronic control module found on a heavy truck or bus and that communicates on the SAE J1939 or J1587/J1708 data communications protocol.

This course highlights the various vehicle systems and triggering events that may provide data useful in a collision investigation. Guided by recognized industry experts, techniques for preservation and interpretation of HVEDR data will be explored.

This highly interactive workshop includes in-class instruction, demonstrations and practical hands-on experiences for acquiring and analyzing data from commercial vehicles.

**LEARNING OBJECTIVES**

Upon completion of this workshop, you will be able to:

- Identify the potential sources of HVEDR data available on commercial vehicles
- Utilize various methodologies for accessing and imaging data from HVEDRs while preserving the data in its original electronic format within the control module
- Compile documentation of the vehicle and the imaged HVEDR data to properly establish foundational facts that tie the data to the vehicle and to ensure the reliability of incident specific data
- Properly interpret data from HVEDRs and understand the limitations of this data
- Analyze HVEDR data in the context of collision reconstruction

**WHO SHOULD ATTEND**

This course is a must for anyone involved in the investigation and analysis of commercial vehicle crashes who needs to understand the types of event data that are available on commercial vehicles, how it is generated, how it is accessed from the vehicle, and how to apply it in a collision reconstruction.

“Without exception, this is the most advanced HVEDR course available today and is well worth the time and money.”

David Wesolowski
Forensic Technician
Quest Engineering & Failure Analysis, Inc
CONTENT HIGHLIGHTS

• Primer on Multiplexed Vehicle Electronics Systems and Vehicle Data Networks
• HVEDR Devices and Data Currently Available on Heavy Vehicles
• Anti-lock brake and stability control systems
• Inspecting the Vehicle
• Accessing and Imaging Data
• Validation Studies and the Accuracy/Reliability of HVEDR Data
• Interpreting and Applying HVEDR Data
• The Future of HVEDR
• Hands-on Workshop

INSTRUCTORS

Timothy Cheek
Principal Engineer, DELTA [v] Forensic Engineering, Inc.

David Plant
Owner, D. P. Plant & Associates

John C. Steiner
Senior Automotive Engineer, KEVA Engineering, LLC

I.D.# C1022

SCHEDULE
May 13-16, 2014
Charlotte, North Carolina
October 21-24, 2014
Oxnard, California

FEES
List: $2,145
Members
Classic: $2,095
Premium: $2,045
Elite: $1,985

3.5-DAYS/2.4 CEUS

Get the complete course description and register:
training.sae.org/seminars/C1022
EDR’s are not new, but are becoming more prevalent in part due to a new federal regulation. 49 CFR, Part 563, which affects vehicles produced after September 30, 2012, will result in a standardized and publicly available EDR in 90% of new vehicles.

This course will provide you with the skills necessary to analyze EDR data that has already been imaged, apply it to crash reconstruction, and reconcile it with calculations using other data sources. The class presents the generic analysis step by step, then groups EDR’s into manufacturer-specific families and their data limitations, and works case studies that highlight targeted key learning objectives. Your will also learn key points to satisfy court Frye and Daubert requirements for EDR data to be admissible, and suggest methods to present EDR data that will communicate the data understandable to attorneys and lay juries.

**LEARNING OBJECTIVES**

By attending this seminar, you will be able to:

• Describe EDR sensor operation, recording interval and duration, resolution, accuracy, and time latency and articulate the limitations of applying the data to crash analysis.

• Calculate min and max speeds prior to loss of control or braking, and at impact based on the last accurate EDR pre-crash speed data point.

• Evaluate EDR vs. actual ground speed for specific vehicle operational conditions and vehicle equipment modifications.

• Calculate speed at impact and closing speeds by combining EDR Delta V data with normally collected scene and vehicle data such as post-crash travel distance, departure angle, drag factor, and vehicle weights. Apply data to inline rear end, head on, and angular collisions.

• Reconcile EDR data with other physical evidence and combine to narrow speed ranges.

• Use time-distance and overlay EDR data on scene maps/diagrams to show where critical driving inputs were made vs. inputs required to avoid collisions.
WHO SHOULD ATTEND
This course is a must for anyone involved in the investigation and analysis of passenger car and light truck crashes. In addition, this course can be valuable to insurance adjusters, claims managers, and attorneys handling automotive collisions. Engineers designing EDR’s to meet part 563 regulations may also benefit from understanding how the data they store will be used.

CONTENT HIGHLIGHTS
• Overview - EDR data availability by manufacturer by model and model year
• Speed data analysis
• Speed data accuracy
• Accelerator pedal release and brake application
• Using Delta V to obtain closing speed and impact speed
• Delta V data accuracy
• GM EDR families - data availability and limitations, and case studies
• Ford EDR families - data availability and limitations, and case studies
• Chrysler EDR families - data availability and limitations, and case studies
• Toyota EDR families - data availability and limitations, and case studies
• Honda, Mazda, and other manufacturer EDR families (to the extent they are known at the time of the class)
• EDR data admissibility technical foundation

INSTRUCTOR
Richard R. Ruth
President, Ruth Consulting LLC

I.D.# C1210

SCHEDULE
May 28-30, 2014
Troy, Michigan
October 27-29, 2014
Norwalk, California

FEES
List: $1,565
Members
Classic: $1,405
Premium: $1,325
Elite: $1,245

THREE-DAYS/2.0 CEUS

Get the complete course description and register:
training.sae.org/seminars/C1210
SIDE IMPACT OCCUPANT SAFETY AND CAE

Side impact crashes account for approximately 26% of all motor vehicle fatal crashes, second only to frontal crashes, according to a report by the National Highway Transportation and Safety Administration (NHTSA).

This seminar is designed to familiarize participants with the engineering principles behind vehicle and restraint designs for occupant safety. You will learn the mechanics of side crashes and how vehicle structures, restraint systems, and interiors affect occupant safety. You will also be exposed to system, subsystem and component level CAE and testing tools used in the simulation of side impacts. Accident crash statistics, biomechanics, government regulations and public domain frontal safety tests will also be covered. A combination of hands-on activities, including computer simulations, discussion, and lecture are used throughout the course.

LEARNING OBJECTIVES

By attending this seminar, you will be able to:

• Explain side impact and how the vehicle structure, door trim and side airbags affect occupant responses
• Describe different dummy types and what injury metrics are used to evaluate occupant injuries
• Interpret FMVSS 214 regulations and public domain safety evaluations such as LINCAP and IIHS safety rating systems
• Describe system, sub-system and component level CAE and testing tools that are used to assist in design decisions
• Evaluate the relative effect of door intrusion and restraint system characteristics
• Select correct data filtering to process crash test data

WHO SHOULD ATTEND

Engineers in the field of occupant protection in side impacts as well as those who require knowledge regarding IIHS side impact ratings and the FMVSS 214 regulation. This course will also be of interest to engineers who deal with side impact issues or are involved in designs of side impact related components, such as airbags, door trim, side impact bolsters, door structures and body structures.

While car companies and suppliers continue to develop new technologies that make vehicles safer, NHTSA rolled out updated safety regulations (FMVSS 214) based on new research studies, making vehicle safety design more and more complex.
CONTENT HIGHLIGHTS

• Vehicle Crash Safety Introduction
• Vehicle Side Impact Test Modes
• Biomechanics
• Test Dummies and Injury Metrics
• U.S. Regulatory Requirements
• U.S. Public Domain Tests and Performance Ratings
• European Regulatory Requirements
• Euro-NCAP and Performance Ratings in Other Markets
• Test Data Processing
• Hands-on Computer Exercises
• Side Impact Mechanics
• Restraint System for Side Impact
• Crash Sensors
• Vehicle Crash Computer Modeling (CAE)
• Component and Sub-system Crash Development Tools
• Vehicle Level Crash Development and Test Data Analysis
• Design Optimization and Robustness
• Hands-on Project Using Miniature Test Kit

INSTRUCTORS

Dr. Zhibing Deng
Senior Engineer, Ford Motor Company

Dr. Stephen Kang
Technical Specialist, Safety Core and Strategy Department
Ford Motor Company

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SAE Members - have you already taken a Professional Development course in the last few months? You could qualify for an additional 20% off of a future course.

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Call SAE Customer Service to register and get your discount! 1-877-606-7323 (1-724-776-4970 outside the U.S. & Canada). Please use promo code FREQUENTPD when registering.
VEHICLE FRONTAL CRASH OCCUPANT SAFETY AND CAE

This seminar covers the mechanics of frontal crashes and how vehicle structures, vehicle restraint systems, and vehicle interiors affect occupant safety. It also describes details of how CAE tools work in the simulation of frontal crashes.

The goal of the course is to familiarize participants with engineering principles behind vehicle and restraint designs for occupant safety. Accident crash statistics, biomechanics, government regulations and public domain frontal safety tests will be reviewed briefly. Students will also be exposed to Madymo, one of the major occupant CAE tools. The class also offers participants opportunities to do hands-on computer analysis as well as simplified hands-on crash tests, where students can learn first-hand how vehicle pulses and restraint design affect occupant response.

LEARNING OBJECTIVES
By attending this seminar, you will be able to:
• Explain frontal crashes and how vehicle structure and restraint systems affect occupant responses
• Describe how restraint components function in crashes and protect occupants
• Carry out calculations of injury metrics using test or CAE results as input
• Describe the occupant CAE tool, Madymo, and how it works
• Explain assumptions and limitations of CAE models
• Evaluate the relative effect of crash pulse, and restraint system characteristics
• Analyze and evaluate crash pulses
• Describe FMVSS 208 and NCAP requirements and metrics
• Explain the use of different dummies and their limitations

WHO SHOULD ATTEND
This course is designed for engineers in the fields of automotive safety or accident reconstruction who wish to learn the characteristics of vehicle frontal crashes and their effects on occupant response and safety.

“The course and the instructor were magnificent. Absolutely indispensable training for any accident reconstructionist wanting an understanding of vehicle safety systems.”

Sal Fariello
Accident Reconstructionist,
Eastern Forensic Science Group
CONTENT HIGHLIGHTS
• Vehicle Crash Safety Introduction
• Vehicle Frontal Crash Modes
• Biomechanics - Human Anatomy and AIS Injury Scale
• Brief Overview of Frontal Test Dummies and Injury Metrics
• Frontal Crash Mechanics
• Crash Sensor - Airbag & Pretensioner Firing & Non-firing Conditions; Sensor Tests
• Brief Review of U.S. and European Regulations and Public Domain Safety Ratings
• Numerical Data Processing
• Vehicle Crash Computer Modeling (CAE)
• DABLIT - Component Test for Driver Airbag
• DOE and Optimization
• Restraint System
• Real World Crashes - Safety for the Aging Population; Crash Severity Distribution

INSTRUCTOR
Dr. Stephen Kang
Technical Specialist, Ford Motor Company
Safety Core and Strategy Department

I.D.# C0621

SCHEDULE
June 5-6, 2014
Troy, Michigan

December 4-5, 2014
Troy, Michigan

FEES
List: $1,315
Members
Classic: $1,185
Premium: $1,115
Elite: $1,055

TWO-DAYS/1.3 CEUS
Get the complete course description and register:
training.sae.org/seminars/C0621
Although many have an idea of what the term “driver distraction” means, there is no common definition within the research community. Additionally, there are many studies that have investigated the topic, but with varying and sometimes conflicting results. What should be made of these discrepancies?

This four-hour webinar will provide an overview of driver distraction (predominantly electronic devices): the problem; how to define it; the current state of research and how to critically evaluate that research to make informed decisions; and the effectiveness of state laws and fleet policies to reduce it. The conclusion of the course will summarize strategies, techniques, and technologies that have been shown to be effective in reducing distracted driving from electronic devices.

LEARNING OBJECTIVES
By connecting with this webinar, you will be able to:
• Weigh the extent of the driver distraction problem
• Define driver distraction
• Critically examine the current state of driver distraction research
• Identify the strengths and limitations of various research approaches that assess driver distraction from electronic devices
• Recognize the difference between various forms of distraction (cognitive, auditory, visual, manual)
• Assess the effectiveness of policy efforts to reduce driver distraction from electronic devices
• Explain that all cell phone “tasks” do not have equal risk
• Determine effective strategies, techniques, and technologies for minimizing distracted driving

WHO SHOULD ATTEND
Engineers interested in a critical examination of the latest research in driver distraction. Vehicle manufacturers, OEMs, and cell phone providers and manufacturers will be able to use the information presented in this webinar to develop engineering solutions in this area. Government officials and transportation safety researchers will also benefit.
CONTENT HIGHLIGHTS

• Overview of Driver Distraction Problem
• Forms of Distraction
• Definition of Driver Distraction
• Overview of Methods to Assess Driver Distraction
• Possible Reasons for Discrepancies
• Effectiveness of Policy Efforts to Reduce Driver Distraction from Electronic Devices
• Research Needs/Next Steps
• Minimizing Distracted Driving from Electronic Devices (what works, what shows promise, what doesn’t work)

INSTRUCTOR

Dr. Jeffrey Hickman
Group Leader, Virginia Tech Transportation Institute

I.D.# WB1140

SCHEDULE
April 2-4, 2014
Live Online
September 30-October 2, 2014
Live Online

FEES
List: $415
Members
Classic: $374
Premium: $353
Elite: $332

TWO, 2-HOUR SESSIONS/.4 CEUS

Get the complete course description and register:
training.sae.org/seminars/WB1140

ACCESS THIS COURSE ONLINE AND ON DEMAND AS A WEBINAR RECORDING

SAE Webinar Recordings are audio/visual captures of live webinars. The course sessions are unedited to include the results of interactions with the live participants and to expedite course availability. A learning assessment is available at the end of the course to reinforce learning and retention and gauge your understanding of the topic.

I.D. # PD31140ON

FEES
See above.

4-HOURS/ .4 CEUS

Get more information and register:
training.sae.org/webrecordings/PD31140ON
NEW! DEVELOPING IN-VEHICLE USER INTERFACES: DESIGN PRINCIPLES AND TECHNIQUES

The In-Vehicle user environment is transitioning from fixed dedicated features to an extensible connected interface that can dramatically increase complexity faced by the driver. This course will provide a systematic design method to develop intuitive and safe vehicle interface solutions. Participants will learn user interaction design steps, tools, and the team synergies required to develop an interface from concept to the final product. The course will use exercises to practice interface design, with example interfaces to cover lessons learned. Participants will learn key interaction elements and principles to build a robust and flexible interface.

Individuals interested in this topic should also consider attending Vehicle User Experience: Human Factors Principles and Techniques for Design, Research and Development (ID# C1340). Read more about this course on page 16.

LEARNING OBJECTIVES
By attending this seminar, you will be able to:
• Describe the HMI user experience design flow from market research through hardware implementation
• Identify the range of usability issues specific to the vehicle environment and how they differ from desktop and mobile usability
• Articulate important human factors principles relevant to the automotive environment
• Utilize basic development tools and methods for interface design
• Explain how to integrate multiple user interfaces into a single unified interface

WHO SHOULD ATTEND
Engineers who are involved in vehicle user interaction systems (e.g., controls and displays for infotainment, navigation, smartphone integration, connectivity, HVAC, lights, etc.) in any function or role will benefit from this seminar.
CONTENT HIGHLIGHTS
• Understanding User Interaction Design Team and Collaboration
  • Key resources
  • Design process
• Human Factors Principles Important to Vehicle HMI Design
  • Memory
  • Perception
  • Information processing
• The User
  • Learning curve
  • Perceived complexity
  • Easy to use
• Techniques of HMI Design and Development
  • User Interactions
  • Developing HMI use cases
  • HMI interaction architecture
  • User testing
• HMI Design Tools and Documentation Methods
  • Interaction animation and models
  • Flow diagrams
  • Graphic development

INSTRUCTOR
John Kosinski
User Interaction Technical Professional, Visteon Corporation

I.D.# C1341

SCHEDULE
April 7, 2014
Detroit, Michigan
Held in conjunction with SAE 2014 World Congress and Exhibition

October 2, 2014
Troy, Michigan

FEES
List: $755
Members
Classic: $685
Premium: $635
Elite: $605

ONE-DAY/.7 CEUS
Get the complete course description and register:
training.sae.org/seminars/c1341
NEW! VEHICLE USER EXPERIENCE: HUMAN FACTORS PRINCIPLES AND TECHNIQUES FOR DESIGN, RESEARCH AND DEVELOPMENT

The automotive industry faces unprecedented growth in vehicle technologies and features that can dramatically affect the vehicle user experience. This course will provide an overview of principles and techniques for designing and developing vehicle interfaces which deliver optimal solutions while avoiding unintended consequences like driver distraction. Case studies and exercises will be used to identify best practices with key human factors design and research concepts that provide an intuitive, safe and effective user experience.

Individuals interested in this topic should consider attending Developing In-Vehicle Infotainment User Interfaces: Design Principles and Techniques (ID# C1341). Read more about this course on page 14.

LEARNING OBJECTIVES
By attending this seminar, you will be able to:
• Describe the range of user experience issues specific to the vehicle environment and understand how they are different from desktop and mobile usability
• Apply important human factors principles and techniques relevant to effective automotive user interface design
• Describe and use basic design and development tools and methods of interface design
• Understand how to assess the quality and applicability of specific research findings to your user experience design and development projects
• Perform research as efficiently and effectively as possible with available resources
• Describe and use basic measures and usability tests that can quickly reveal user experience issues early in the development process to avoid costly problems later on

WHO SHOULD ATTEND
Engineers who are involved in vehicle user interaction systems (e.g., controls and displays for infotainment, navigation, smartphone integration, connectivity, HVAC, lights, etc.) in any function or role will benefit from this seminar.
CONTENT HIGHLIGHTS

• The Vehicle User Experience
  • Special features of the vehicle context
  • User interfaces, user interaction and user experience

• Human Factors Principles for Vehicle User Experience Development
  • The cognitive and physical ergonomics distinction
  • Key concepts in attention, distraction, memory and perception

• Design Principles for Vehicle User Experience Development
  • Controls and Displays
  • Design Strategies

• Research Principles for Vehicle User Experience Development
  • Techniques, measures and methods for assessing user experience
  • Best practices in research

• Resources for Effective Vehicle Interface Design
  • Standards and best practices

INSTRUCTOR

Michael Tschirhart
Human Factors Technical Fellow and Human-Machine Interaction (HMI) R&D Manager, Visteon Corporation
ISO 26262: Road Vehicle - Functional Safety is now becoming a condition of compliance for doing business in the automotive sector. The Scope states: “ISO 26262 is intended to be applied to safety-related systems that include one or more electrical and/or electronic (E/E) systems and that are installed in series production passenger cars with a maximum gross vehicle mass up to 3,500 kg...”

This course provides background for reading and applying the standard and explains its scope, the major differences from the general safety standard IEC 61508, and how the scope changes with the introduction of new systems. The vocabulary of the standard is used to enable you to engage in the context of the standard and a selected list of acronyms is provided as reference. An overview of all parts of the standard is provided and its impact is explained.

It is recommended that you have a copy of the ISO 26262 Standard, but it is not required.

LEARNING OBJECTIVES

By connecting with this webinar, you will be able to use the standard to:
• Determine if and how the scope of ISO 26262 applies to your system or component
• Plan a Safety Case based on ISO 26262
• Prepare or reply to Development Interface Agreement compliant to ISO 26262
• Determine the safety goals and Automotive Safety Integrity Level (ASIL)
• Determine the HW requirements based on ASIL
• Determine the SW requirements based on ASIL

WHO SHOULD ATTEND

Engineers and managers that desire an overview of the standard’s content in order to become skilled practitioners. This includes those involved in product development for vehicle manufacturers or suppliers whose products contain electronics or software.

“This webinar covers all aspects of the ISO 26262 standard. The instructor draws upon his in-depth experience and uses practical examples to reinforce the material. I recommend this webinar to anyone needing to learn how they will be affected by ISO 26262.”

Thomas Le Mense
Principal Application Engineer
Infineon Technologies North America Corp
CONTENT HIGHLIGHTS

- Motivation for Creating ISO 26262
  - Pre-standard work of France and Germany
  - U.S. involvement and resulting changes to the standard
  - National Academy of Science expectations
- Differences to IEC 61508, the General Safety Standard Previously Used
  - Comparison
  - Impact on Automotive Development
- Overview of the ISO 26262
  - Planning
  - System
- Overview of the ISO 26262 (cont’d)
  - Hardware
  - Software
  - Operations
  - Supporting Processes
  - ASIL-oriented and Safety-oriented Analyses

INSTRUCTOR

Joe Miller
Chief Engineer of Systems Safety, TRW Automotive Chairman, United States Technical Advisory Group to ISO TC22/SG3/WG16

I.D.# WB1134

SCHEDULE

March 25-27, 2014
Live Online

August 20-22, 2014
Live Online

December 10-12, 2014
Live Online

FEES

List: $415
Members
Classic: $374
Premium: $353
Elite: $332

ONE, 2-HOUR & ONE, 2.5-HOUR SESSION/.45 CEUS

Get the complete course description and register:
training.sae.org/seminars/WB1134

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McClean, Virginia - LMI
Mar 17-18  ARP4754A and the Guidelines for Development of Civil Aircraft and Systems -- I.D.# C1118
Mar 20-21  ARP4761 and the Safety Assessment Process for Civil Airborne Systems -- I.D.# C1245

Troy, Michigan - SAE International Office
Mar 10-11  Material Selection & Testing for Plastics -- I.D.# C0134
Mar 10-11  New! Military Tactical Vehicle Product Development - Concept to Production -- I.D.# C1248
Mar 10-12  Combustion & Emissions for Engineers -- I.D.# 97011
Mar 17-18  The Basics of Internal Combustion Engines -- I.D.# C0103
Mar 19-21  Strategic Leadership -- I.D.# C0620
Mar 20    New! Introduction to Brake Noise, Vibration, and Harshness -- I.D.# C1337
Mar 21    Brake Noise Problem Resolution -- I.D.# C0831
Mar 24-25  Sheet Metal Stamping: Robust Formability -- I.D.# C0713
Mar 24-25  Powertrain Selection for Fuel Economy and Acceleration Performance -- I.D.# C0243
Mar 24-25  Diesel Engine Technology -- I.D.# 93014
Mar 25-25  Safe Handling of High Voltage Battery Systems -- I.D.# C1019
Mar 28-28  Statistical Tolerance Design -- I.D.# B8033
Mar 31-Apr 1  Embedded Control Systems Design Workshop -- I.D.# C0922
Mar 31-Apr 1  Creating and Managing a Product Compliance Program -- I.D.# C1213
Mar 31-Apr 1  A Familiarization of Drivetrain Components -- I.D.# 98024

Webinar – Live Online
Mar 11-18  New! Catalytic NOx Control Technologies for Diesel and GDI Engines Webinar -- I.D.# WB1237
Mar 31-Apr 3  Introduction to Design Review Based on Failure Modes (DRBFM) Webinar -- I.D.# WB1047

Norwalk, California - Cerritos, College (SCCT)
Apr 28  New! Introduction to Composites Fabrication and Assembly in Aerospace, Space, and Transportation -- I.D.# C1311
Apr 28-29  Selective Catalytic Reduction for Diesel Engines -- I.D.# C0913
Apr 29-30  Automated Systems for Aerospace and Space Applications -- I.D.# C1313

Detroit, Michigan - Detroit Marriot at the Renaissance Center
(held in conjunction with the SAE 2014 World Congress)
Apr 7  Exhaust Flow Performance and Pressure Drop of Exhaust Components and Systems -- I.D.# C0235
Apr 7  Success Strategies for Women in Industry and Business -- I.D.# C1202
Apr 7  New! Vehicle Dynamic Basics for Off-highway Trucks -- I.D.# C1239
Apr 7  New! Introduction to Contemporary Muffler Design Techniques – I.D.# C1352
Apr 7-8  Introduction to Brake Control Systems: ABS, TCS, and ESC -- I.D.# C0315
Apr 7-8  Threaded Fasteners and the Bolted Joint -- I.D.# 95030
Apr 7-8  Engine Failure Investigation and Analysis -- I.D.# C1344
Apr 7-9  Weibull-Log Normal Analysis Workshop -- I.D.# 86034
Apr 7-9  Geometric Dimensioning & Tolerancing (GD&T) -- I.D.# C0133
Apr 7-9  Managing Engineering and Technical Professionals -- I.D.# C0608
Apr 7-9  Injuries, Anatomy, Biomechanics & Federal Regulation -- I.D.# 85049
Apr 7-9  Internal Combustion Systems: HCCI, DoD, VCT/VVT, DI and VCR -- I.D.# C0613
Apr 9-10  Introduction to Hybrid and Electric Vehicle Battery Systems -- I.D.# C0626
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**Troy, Michigan - SAE International Office**

- **April 2** Fundamentals of Automotive All-Wheel Drive Systems -- I.D.# C0305
- **April 7-8** Design of Experiments for Engineers -- I.D.# C0406
- **April 7-9** Principles of Cost and Finance for Engineers -- I.D.# C0828
- **April 22-24** Fundamentals of Heavy Truck Dynamics -- I.D.# C0837
- **April 28-29** Engineering Project Management -- I.D.# 99003
- **April 28-29** Finite Element Analysis for Design Engineers-Hands-On FEA Workshop -- I.D.# 93006
- **April 28-29** Corrosion Engineering and Prevention -- I.D.# C1217
- **April 28-29** Improving Fuel Efficiency with Engine Oils -- I.D.# C0914

**Webinar – Live Online**

- **April 2-4** Driver Distraction from Electronic Devices: Insights and Implications Webinar -- I.D.# WB1140
- **April 15** Advanced GD&T Competencies: Datum Usage Webinar -- I.D.# WB1319
- **April 17** Advanced GD&T Competencies: Profile of a Surface Webinar -- I.D.# WB1320
- **April 22** Advanced GD&T Competencies: Composite Positioning Webinar -- I.D.# WB1321
- **April 29-May 1** Patent Litigation in the U.S.: What You Need to Know Webinar -- I.D.# WB0940
- **April 30- May 2** Turbocharging for Fuel Economy and Emissions Webinar -- I.D.# WB1018

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