HMI
TRANSPORT & SYSTEMS

FUTURE INTELLIGENT & INTEGRATED CONCEPTS,
DEVELOPMENT AND USER EXPERIENCE DESIGN
IN AUTOMOTIVE COCKPIT

25TH – 26TH JUNE 2012 | KEMPINSKI HOTEL BRISTOL BERLIN

MORE THAN 15 CASE STUDIES | ICEBREAKER SESSION | WORLD CAFÉ SESSION | CHALLENGE YOUR PEERS

HTTP://CAR-HMI.WE-CONECT.COM

RESEARCHED & DEVELOPED BY WE conECT
GLOBAL LEADERS
OVERVIEW
HMI TRANSPORT & SYSTEMS 2012

SPEAKERS

Byron Shaw, Managing Director - GM Advanced Technology
Siemens Valley

Dr. Frank Althoff, Group Head HMI / Operating Concepts
Volkswagen AG / Germany

Kazuhide Togai, Head of Research Dept., Development Engineering Office
Mitsubishi Motors Corporation / Japan

Stephan Durach, Head of Entertainment and Mobile Devices
BMW Group / Germany

Detlef Kuck, Leader Telematics and Navigation Research, Technical Expert Infotainment Strategies Global Driver Assistance & Active Safety Europe
Ford-Werke GmbH / Germany

Trent Victor, Department Area Manager for Driver Environment
Volvo Technology Corporation / Sweden

Werner Hamberger, Head of Development Control Concept
Audi AG / Germany

Dr. Ute Winter, Senior Researcher Human-Machine Interface Lab General Motors Advanced Technical Center / Israel

Olivier Morellec, HMI Corporate Leader
PSA Peugeot Citroen / France

Lee Stryczchuk, Human Machine Interface Technical Specialist
Jaguar & Land Rover Research, Jaguar Cars Limited / UK

Tuinh Diplimian, Manager, Distraction Research and HMI Development, Human Factors Group, VPDX3
Toyota Technical Center, TEMA / USA

Dr. Stefan Mattes, Manager Human Factors, Group Research & Technology
Daimler AG / Germany

Stefan Wolter, Manager Vehicle Interior Technologies
Ford-Werke GmbH / Germany

Laurent Nicolas, Ergonomics Engineer, HMI expert
Peugeot Citroen Automobiles Vélizy Technical Center / France

Anil Bansal, Director EES
Navistar, Inc. / USA

Dr. Cristina Zoldan, Senior Specialist, Product Research, Interiors, User Experience, Cognitive Interaction
Centro Ricerche Fiat S.c.p.A. / Italy

Glen DeVos, Global Engineering Director for Infotainment and Driver Interface
Delphi / Germany

Jens Ohler, Director Global Telematic and Infotainment Product Management
Johnson Controls Automotive Electronics / Germany

Mika Rytkönen, Director, Industry Collaboration, Nokia and President, The Car Connectivity Consortium
Nokia Corporation / Finland

Dr. Andreas Keinath, Head of Concept Quality
BMW AG / Germany

Prashanth Halady, Director, HMI Center of Competence
Robert Bosch GmbH / Germany

Dr.-Ing. Gerrit Meixner, Head of the Center for Human-Machine-Interaction (ZMMI)
German Research Center for Artificial Intelligence / Germany

Dr. Frank Försterling, Head of Advanced Technology Infotainment and Connectivity
Continental Automotive GmbH / Germany

Dr. Rainer Heers, Leader Advanced HMI
Visteon Innovation & Technology GmbH / Germany

Dr. Thomas Vöhinger-Kuhnt, Senior Human Factors Engineer Center of Competence HMI Harman Infotainment Division
Harman Becker Automotive Systems GmbH / Germany

Jasper Pauwelussen, Manager Human-Machine Interaction
TNO Human Factors / The Netherlands

MAIN TOPICS

Development, Automation & Processing

- HMI Concepts, Development & Processes between OEM’s & Suppliers in an international environment – Challenges for international automotive companies
- Model-driven HMI development: Optimization of HMI development processes and efficient cooperation of involved actors and HMI development & Definition of a reference model-driven development process for HMI systems in the automotive sector

Concepts & Systems

- Embedded vs. accommodated or tethered devices for connectivity and infotainment and „apps“ – The HMI-OEM perspective
- Next Generation Infotainment Solution – Challenges in managing HMI, Connected Cars & Mobile Apps
- Augmented Reality – New dimensions in driver assistance and navigation, integration in a safe display experience of the future and implications for HMI development
- Visual-haptic interaction feedback in automotive touch screens
- Automotive HMI Experience – Standardized car stereo interfaces to ensure a safe, predictable experience
- Speech Applications as Part of an In-vehicle Multimodal Interface for Infotainment Systems: Trends, Future Concepts, and the Cultural Challenge for Global Markets

HMI & User Experience Design

- Cognitive Load and In-Vehicle Human-Machine Interaction - HMI Workload Manager, the right information at the right time
- HMI Development between Design Thinking, User Experience Design and IT: Tier One & OEM Perspective
- HMI and Total Vehicle Integration system: The user experience perspective on Touch Screen Integrated Haptic, Auditory Feedback, Integrated Human Modelling, Simulation to support Human Error Risk and Analysis of Partially Autonomous Driver Assistance Systems
- Mobile Internet, automotive HMI & APPs – Challenges and solutions for the automotive lifecycle, safety and usability

Driver distraction, Workload Management, HMI, Driver & Safety

- Driver distraction from safety and comfort devices and end-consumer preferences of non-standardized HMI
- Infotainment, Connected Car, HMI Concepts and Safety – Challenges for the automotive industry regarding new performance guidelines (NHTSA Guidelines) and limitation impacts for HMI development
- Holistic HMI approach focused on human-centred HMI design to optimize safety and ease-of-use

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ICEBREAKER SESSION | SUNDAY, 24TH JUNE 2012

we.CONNECT ICEBREAKER

Our Icebreaker Session consists of small Round Tables with speakers, business partners and attendees where the audience will discuss the main challenges and cutting edge topics of the conference in a relaxed atmosphere. Glass in hand, make your way around our Round Tables and get to know each other. Enjoy food and drinks at the opening of the conference, break the ice and get the show on the road.

ICEBREAKER ROUND TABLE 1
Cognitive Load and In-Vehicle Human-Machine Interaction – HMI Workload Manager, the right information at the right time
> Real time driver workload estimation
> Dynamic information filtering based on the state of the driver, vehicle and traffic
> Adapt the way the information is presented based on the workload, postpone information and/or holding back of information
Jasper Pauwelussen, Manager Human-Machine Interaction, TNO Human Factors / The Netherlands

ICEBREAKER ROUND TABLE 2
Safety & comfort: A driver based approach to cockpit HMI
Anil Bansal, Director EES, Navistar, Inc. / USA

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we.CONNECT business peers
Take advantage of solution-oriented individual meetings that we can arrange with these partners before and during the conference.

PROJECT PARTNER
Objective of the project automotiveHMI is the optimization of the development processes for automotive HMI-systems. An integrated approach based on standardized exchange formats, models and interfaces will lead to an increased efficiency in automotive HMI-development with benefits for the entire supply chain: from the vehicle manufacturer and its suppliers to the developers of specialized development tools. The project automotiveHMI is funded by the German Federal Ministry of Economics and Technology (BMWi). www.automotive-hmi.org

REFERENCES OF OUR PAST CONFERENCES
“I would like to congratulate you for the professionalism of your organization and all the special sessions you organized in order to generate discussions between attendees and get to know each other.”
Philippe Heim, TOTAL Refining & Chemicals Belgium

“I certainly enjoyed the sections and sessions – Top Organisation & Conference!”
Kaveh Pourteymour, BP
AGENDA
CONFERENCE DAY 1 | MONDAY, 25TH JUNE 2012

8.00 | Registration with coffee and tea

8.30 | Welcome and introduction by we.CONECT, from the Chair and the Advisory Board

we.CONECT HMI DEVELOPMENT, AUTOMATION & PROCESSING TRACK

8.40 | Case Study
Automotive HMI – Model-driven HMI development in the automotive industry
> Model-driven HMI development: Optimization of HMI development processes and efficient cooperation of the involved actors in the roles and HMI development & Definition of a reference model-driven development process for HMI systems in the automotive sector
> Model-based interchange format: Domain-specific, model-based interchange format that provides a unified and formal specification of inter-process data HMI development / Machine-readable data interface to enable participants to overcome the „digital gap“ that exists now through the paper-based data exchange & exchange format for an uninterrupted and continuous use of development tools
> Platform independent HMI: Develop a domain-specific (format) unified modelling language for specification of HMI (Abstract) modelling language as an interface between the process participants
> Connection between the HMI and application to middleware and to specifying interfaces & better integration of the various stakeholders in the process
> Model-based testing: Development process and requirements analysis / Definition and development of data model / development of description language & prototypical implementation of the modelling language tools / Test Automation with Model-Based Testing
Dr.-Ing. Gerrit Meixner, Head of the Center for Human-Machine-Interaction (ZMMI), German Research Center for Artificial Intelligence / Germany

9.20 | Case Study
HMI concepts and development process – facing the challenges in an international environment
> Handling heterogeneous requirements
> Phases in the HMI development process
> Scope of HMI work from instrument clusters, headunits to mobile services
> Iterative User-centered usability evaluation
> Experiences from working with multiple partners during the individual development steps
Dr. Frank Althoff, Manager Group Head HMI / Operating Concepts, Volkswagen AG / Germany

10.00 | Case Study
Embedded vs. accommodated or tethered devices for connectivity and infotainment and „apps“ – The HMI-OEM perspective
> Assessing the latest technology challenges and trends
> Consumer expectations in different market segments
> How the inner fish steers our interaction with technology
> Mobile Internet, automotive HMI & APPs – Challenges and solutions for the automotive lifecycle, Safety and Usability
> Processes and tools to develop automotive HMI solutions
> HMI concepts with a better usability and user experience
Byron Shaw, Managing Director - GM Advanced Technology Silicon Valley, General Motors Inc. / USA

10.40 | Refreshment break with Networking Zone

we.CONECT CONCEPTS & SYSTEMS TRACK (1)
HMI & User experience Design-Usability: User centred design, ergonomics & hedonics

11.10 | Case Study
HMI Concepts & Systems: Human Modelling in a driver analyzing context: challenges and benefits from the view of Mitsubishi
> Concept and structure for a Driver Model Being Capable to Improve Performance with Learning
> A proper driver model is required for Model Based Development.
> Human driving behaviour is different from that of electronic controller.
> Structure of the driver model is proffered being capable to represent various skill levels.
> Driving skill will be learned and improved with experience
Kazuhide Togai, Head of Research Dept., Development Engineering Office, Mitsubishi Motors Corporation / Japan
11.50 | Case Study
Next Generation Infotainment Solution – Challenges in managing HMI, Connected Cars & Mobile Apps
> Market Trends / Next Generation Infotainment – Challenges / The HMI Server Approach
> Mobile Internet, automotive HMI & APPs – Challenges and solutions for the automotive lifecycle, Safety and Usability
> How to manage the growing number of Input / Output devices in the car: more displays, speech, touch, rotary, gesture...
> How to personalize the car, how to avoid driver distraction – Sophisticated models and integrated approach
> Determine the key technical attributes like open SDKs and APIs that OEMs, wireless Carriers, Tier 1s and content providers must employ to deliver content direct to the driver
> Which devices, content and applications are set for mass in-car adoption to prepare your future solutions
> Perceptions toward existing and potentially new infotainment concepts and alignment to complex consumer requirements
Dr. Frank Försterling, Head of Advanced Technology Infotainment and Connectivity, Continental Automotive GmbH / Germany

12.30 | Lunch with Networking Zone
we.conECT CHALLENGE YOUR PEERS – WHAT WOULD YOU DO?
In up to six round tables, each with six moderators, the participants interact, describe & discuss their specific issues, approaches and solutions regarding the conference topic. we.conECT finds out in advance with a special inquiry approach the most important issues facing the participants.

13.45 | Parallel Round Tables
Based on your input from the delegate checklist, we will create a round table session involving an interactive discussion with your peers. The topics that will be discussed on-site will be announced 3 weeks before the event begins.

we.conECT CONCEPTS & SYSTEMS TRACK (2)
HMI & User experience Design-Usability: User centred design, ergonomics & hedonomics

14.40 | Case Study
Ford Next Generation HMI for Automotive Applications – How technology and innovation can enhance personal freedom and mobility despite expanding vehicle populations and implications for concepts & development of HMI’s
> Ford SYNC Platform – Mobile connectivity & Mobile Applications
> Eco HMI, Customer acceptance, driver distraction, functional feasibility
> Audible Text Messages & Multilingual Intelligence
Detlef Kuck, Leader Telematics and Navigation Research, Technical Expert Infotainment Strategies Global Driver Assistance & Active Safety Europe, Ford / Germany
Stefan Wolter, Manager Vehicle Interior Technologies, Ford / Germany

15.20 | Case Study
Challenges and Approach in developing next-generation car MMI interface & system
> MMI touch – new technologies for new control concepts
> A revolution in operation: Character recognition
> Auxiliary infotainment features – the Black Panel technology
> Adaptability to different vehicle types and markets
> Haptic HMI – Learning from the past, Shaping the Future: Migration and evolution-capable design of human-machine interaction on the example of cooperative management of highly automated vehicles
Werner Hamberger, Head of Development Control Concept, AUDI AG / Germany

16.00 | Refreshment break with Networking Zone

16.30 | Case Study
Application development for mobile devices: Implications for platforms, software management & challenges for HMI concepts & systems between Supplier & OEM
Stephan Durach, Head of Entertainment and Mobile Devices, BMW Group / Germany

17.10 | Case Study
Visual–haptic feedback interaction in automotive touchscreens
> Delaying or removing touchscreen visual feedback increases visual workload
> Touchscreen haptic feedback counteracts effects of degraded visual feedback
> Drivers make fewer glances during touchscreen tasks with haptic feedback enabled
> Driving performance is degraded by interaction with in-car technology
> Haptic feedback improves users’ experience of an in-car touchscreen interface
Lee Skrypchuk, Human Machine Interface Technical Specialist, Jaguar & Land Rover Research, Jaguar Cars Limited / UK
we.CONECT STANDARDS & NORMS TRACK
Challenges in defining and approaches in implementing standards & guidelines for next generation HMI R&D

17.50 | Case Study
Automotive HMI Experience – Connectivity Consortium – Standardized car stereo interfaces to ensure a safe, predictable experience in all cars
> Industry needs one standard for connecting Smartphones with cars – MirrorLink as a choice
> Car context is unique and requires specific UX design
> Industry needs one application development guidelines and certification process for in-car apps
> Creation of an open and scalable ecosystem for boosting innovation
> Developing common application development guidelines and certification process
> Create an open and common solutions that a Smartphone and an IVI system can work better together
> HMI strategy for enabling safe and convenient and intuitive driver access to on-board and off-board services and content

Mika Rytkönen, Director, Industry Collaboration, Nokia and President, The Car Connectivity Consortium, Nokia Corporation / Finland

18.30 | Case Study
Connected Drive, HMI and Safety – Challenges for increasing driver experience and profit
> Understanding how connectivity developments will impact HMI systems
> Critical issues related to driver distraction and the user experience
> Integrating active safety systems with adaptive HMI to enable safer connectivity solutions
> Implications for HMI development, standards and definition of guidelines

Glen DeVos, Global Engineering Director for Infotainment and Driver Interface, Delphi / Germany

DINNER IN A RELAXED ATMOSPHERE TO CONCLUDE
THE FIRST CONFERENCE DAY

20.00 | Networking Dinner

we.CONECT MORNING SESSION
Parallel short talks with a thematic focus

7.50 | Case Study
HMI and Total Vehicle Integration system: The user experience perspective on Touch Screen Integrated Haptic, Auditory Feedback, Integrated Human Modelling, Simulation to support Human Error Risk and Analysis of Partially Autonomous Driver Assistance Systems
Dr. Rainer Heers, Leader Advanced HMI, Visteon Innovation & Technology GmbH

7.50 | Case Study
HMI Development between Design Thinking, User Experience Design and IT: A Tier-One-Perspective™.
> Blending Integrated Navigation Systems with Portable Flexibility
> Update the HMI over Vehicles’ Lifetime
> Run-time Adaptive User Interfaces and Context-Sensitive Feature Activation
> Seamless integration of portable devices to vehicle’s onboard radio
> Easy update mapdata and upload latest applications
> Personalized and context-aware HMI
> Hands on the wheel and eyes on the road
Dr. Thomas Vöhringer-Kuhnt, Senior Human Factors Engineer Center of Competence HMI Harman Infotainment Division, Harman Becker Automotive Systems GmbH

http://car-hmi.we-conect.com
8.40 | Welcome and introduction by we.conect, from the Chair and the Advisory Board

**we.conect World Café**
The World Café will be initiated with lectures lasting 10 minutes

8.50 | Lecture Processing & Development Café I
Infotainment, Connected Car, HMI Concepts and Safety – Challenges for the automotive industry regarding new performance guidelines (NHTSA Guidelines) and limitation impacts for HMI development
Trent Victor, Department Area Manager for Driver Environment, Volvo Technology Corporation / Sweden

9.00 | Lecture User Experience Design Café I
Touch operations and gestures as new modes of interaction in vehicles
> Can touch operations and gestures play a main role in future vehicle HMI?
> Do the principles we currently learn from consumer devices transfer to vehicles?
> What are the pros and cons, e.g. with respect to active safety?
Dr. Stefan Mattes, Manager Human Factors, Group Research & Technology, Daimler / Germany

9.10 | Lecture User Experience Design Café II
Can touch screen interaction do more than infotainment – Advantages and limitations of HMI touch-screen technologies
> Specific benefits and limitations for ADAS
> Dealing with safety issues using touch screen
> Dealing with customers expectation to replace knobs and controls by smartphone-like HMI
> How does the whole cockpit is affected by a touchscreen doing more than infotainment
Olivier Morellec, HMI Corporate Leader, PSA Peugeot Citroen / France
Laurent Nicolas, Ergonomics Engineer, HMI Expert, Peugeot Citroen Automobiles Velizy Technical Center / France

9.20 | Lecture Driver Distraction and Workload Management Café
Driver Distraction, workload management & Information overload in an increasing App-Environment
Tuhin Diptiman, Manager, Distraction Research and HMI Development, Human Factors Group, VPDx3, Toyota Technical Center, TEMA / USA

9.30 | Lecture Processing & Development Café II
Decision making in diagnosis of human-machine systems: The probabilistic and credibility perspectives to deal with uncertainty
Dr. Cristina Zoldan, Senior Specialist, Product Research, Interiors, User Experience, Cognitive Interaction, Centro Ricerche Fiat S.C.p.A. / Italy

9.40 | START WORLD CAFÉ | EACH SESSION LASTS 30 MINUTES
we.conect and the chair open the World Café, explaining the principles and set the World Café etiquette.

**Processing & Development Café I**

**User Experience Design Café I**

**User Experience Design Café II**

**Processing & Development Café II**

**Driver Distraction and Workload Management Café**

**Case Study**
Operating concept, user experience design, multimedia interfaces, haptic touch, HMI upgrades and wireless technology requirements for popular apps in the field of tension between car and consumer needs – Device integration options and HMI approaches
Jens Ohler, Director Global Telematic and Infotainment Product Management, Johnson Controls Automotive Electronics / Germany

12.10 | Lunch with Networking Zone

13.30 | World Café Panel Discussion
Presentation of the key results of the World Café and the individual interviews

14.00 | Case Study
Operating concept, user experience design, multimedia interfaces, haptic touch, HMI upgrades and wireless technology requirements for popular apps in the field of tension between car and consumer needs – Device integration options and HMI approaches
Jens Ohler, Director Global Telematic and Infotainment Product Management, Johnson Controls Automotive Electronics / Germany

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14.40 | Case Study
Developing HMI for electric vehicles: Lessons learned from MINI E field trials
> Insights from worldwide study of electric vehicles (GER, US, UK, FR, JP, CN)
> Social media analysis to gain additional customer feedback
> Definition of Customer needs from objective and subjective usage data
> Iterative Design and evaluation process to meet customer needs
Dr. Andreas Keinath, Head of Concept Quality, BMW AG / Germany

15.20 | Refreshment break with Networking Zone

15.50 | Case Study
Speech Applications as Part of an In-vehicle Multimodal Interface for Infotainment Systems: Trends, Future Concepts, and the Cultural Challenge for Global Markets
> Uniqueness of speech application design in the automotive environment
> General Motors speech application design: natural, cooperative, user-centered
> Speech mode as part of a multimodal interface to enable infotainment systems
> Cultural speech interface design challenge for global markets
Dr. Ute Winter, Senior Researcher Human-Machine Interface Lab, General Motors Advanced Technical Center / Israel

16.30 | Case Study
Evolvement of HMI in increasingly automated driving surroundings
> Trends in automated driving and outlook on future changes in HMI
> New automotive systems require new operating modes: What comes, what goes?
> First experiences with driver acceptance
> Augmented Reality / Head up Display & Safety
Prashanth Halady, Director, HMI Center of Competence, Robert Bosch GmbH / Germany

17.10 | Closing words from the chair and end of the conference

REFERENCES OF OUR PAST CONFERENCES

“Well organized and excellent combination of topics.“
Thomas Gronauer, Bayer Bitterfeld GmbH

“Very interesting, professional organized event with competent and international presence.“
Tobias Zaers, Bilfinger Berger Industrial Services GmbH

„Sharing vision and strategies, highlighted with real examples and creating high value network in chemical sector!“
Philippe Simentin, Solvay

„Good and sufficiently enough dense to our focus persons by using the many opportunities for mutual communication.“
Dr. Roger Wenige, Endress+Hauser Messtechnik GmbH+Co. KG
FOR MORE DETAILED INFORMATION
ABOUT OUR SPEAKERS AND INTERACTIVE SEGMENTS
PLEASE VISIT
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WE ARE LOOKING FORWARD TO WELCOMING YOU!