chassis.tech 2007

Congress with accompanying technical exhibition
March 1 - 2, 2007
Technische Universität München, Garching near Munich

In cooperation with:
Technische Universität München, Department of Vehicle Engineering

TÜV SÜD Automotive GmbH
About the congress

Driving dynamics is driving safety, and driving dynamics sparks driving pleasure. This means that driving dynamics describes the product properties of a vehicle in a major way. What do customers want – products that delight them? Emotions play a key role in this. Consequently, chassis development has to give appropriate consideration to this aspect. The engineer, who is under pressure of shorter and shorter development cycles while the number of functionalities and product derivatives keeps rising, requires modern tools and methods in the fields of concept design, simulation and testing to address these needs.

The resulting challenges are posed in the context of optimising individual vehicle components such as brakes, steering, springs, stabilisers and dampers and – in a further step – to link them with systems for roll-prevention and driver assistance. Such vehicle control systems - used to pursue improvements in driving dynamics, active safety and ride – create potentials far surpassing the results that could be achieved by conventional systems. In the future, it is planned to integrate them into a comprehensive chassis management system to pave the way for further progress.

The “chassis.tech 2007” congress will address this entire complex, bringing together international experts from various fields for professional exchange.

Target audience

- Automotive and automotive supplier industries
- Engineering services providers
- Universities and research institutes
- System suppliers
- Authorities and associations
Program committee

- Dr Volker Berkefeld, Dr. Ing. h.c. F. Porsche AG
- Uwe-Norbert Bleck, Gumpert Sportwagenmanufaktur GmbH
- Dr Stefan Gies, AUDI AG
- Dr Veit Held, Adam Opel GmbH
- Thomas Nickels, MAN Nutzfahrzeuge AG
- Dr Erich Sagan, BMW AG
- Christoph Schulenburg, smart GmbH
- Heinrich Schürr, ZF Sachs AG
- Pim van der Jagt, Ford-Werke GmbH

Chairmen

- Prof Dr-Ing. Bernd Heißing, TU München, Department of Vehicle Engineering (FTM)
- Bernhard Schick, TÜV SÜD Automotive GmbH

Exhibition

Companies interested in showcasing their products and services will have the opportunity to do so during an exhibition held in conjunction with the congress. Please reserve your stand now! For more information, please visit www.tuev-sued.de/chassis.tech.

Congress languages

German, English and French (as required by international participation: simultaneous translation of German presentations into English and French)
Venue

Technische Universität München
Boltzmannstr. 15
85748 Garching near Munich

Participation fee

€ 990.- plus VAT (if applicable)
The fee includes congress documentation, lunch and beverages during the breaks as well as dinner at the evening event on March 1, 2007.

Hotel reservation

For the participants, rooms are available at the Achat Hotel München Airport at a special rate of € 47.50 or at the Victor’s Residenz Hotel Munich in Unterschleißheim at a special rate of € 114.- (including breakfast, available up to February 3, 2007). You will find further information about the hotels and other accommodation nearby at www.tuev-sued.de/chassis.tech. If you are interested in a hotel reservation through us, please specify this when registering.

Registration

Please send in the enclosed form via fax or register online at www.tuev-sued.de/chassis.tech.
# Program overview

## Thursday, March 1, 2007

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00</td>
<td>Registration</td>
</tr>
<tr>
<td>9:15</td>
<td>Welcome</td>
</tr>
<tr>
<td>9:30</td>
<td>Plenary Session I</td>
</tr>
<tr>
<td>12:30</td>
<td>Lunch break</td>
</tr>
<tr>
<td>13:30</td>
<td><strong>1st Parallel Session</strong></td>
</tr>
<tr>
<td>13:30</td>
<td>Development Methods I</td>
</tr>
<tr>
<td>15:30</td>
<td>Development Methods II</td>
</tr>
<tr>
<td>19:00</td>
<td>Evening Event</td>
</tr>
<tr>
<td>15:30</td>
<td><strong>2nd Parallel Session</strong></td>
</tr>
<tr>
<td>15:30</td>
<td>Active Safety</td>
</tr>
<tr>
<td>15:30</td>
<td>Active Chassis Systems</td>
</tr>
</tbody>
</table>

## Friday, March 2, 2007

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00</td>
<td><strong>1st Parallel Session</strong></td>
</tr>
<tr>
<td>9:00</td>
<td>Development Methods III</td>
</tr>
<tr>
<td>11:00</td>
<td>Development Methods IV</td>
</tr>
<tr>
<td>12:30</td>
<td>Lunch break</td>
</tr>
<tr>
<td>13:30</td>
<td>Plenary Session II</td>
</tr>
<tr>
<td>17:00</td>
<td>Farewell</td>
</tr>
<tr>
<td>9:00</td>
<td><strong>2nd Parallel Session</strong></td>
</tr>
<tr>
<td>9:00</td>
<td>Engineering Strength/Material</td>
</tr>
<tr>
<td>11:00</td>
<td>Chassis Systems</td>
</tr>
</tbody>
</table>
Program

Thursday, March 1, 2007

From 8:00 Registration

9:15 Welcome
Frank Erath, Managing Director,
TÜV SÜD Automotive GmbH, Garching

Plenary Session I

Facilitator: Dr Stefan Gies, AUDI AG, Ingolstadt

9:30 The Chassis of the AUDI R8
Dr-Ing Horst Glaser, Dipl-Ing Peter Kainz, AUDI AG, Ingolstadt

10:00 The Chassis of the New Mercedes Benz C-Class
Ralph Michalski, DaimlerChrysler AG, Sindelfingen

10:30 OEM Strategies regarding improved handling and vehicle dynamics
Philip G. Gott, Global Insight Inc., Lexington, USA

11:00 Coffee break

11:30 Intelligent Networking for more Safety and Agility
The Combination of Active and Passive Safety Systems
Dr Edwin Liebemann, Dr Michael Fausten,
Robert Bosch GmbH, Abstatt
12.00  Integral Approach to Active Suspension Control with Preview
Dipl-Ing Andreas Schindler, Dr-Ing Ralph Streiter, DaimlerChrysler AG, Böblingen
Prof Dr-Ing Georg Bretthauer, Forschungszentrum Karlsruhe

12:30  Lunch break

1st Parallel Session

Development Methods I
Facilitator: Pim van der Jagt, Ford Forschungszentrum Aachen GmbH

13:30  Application of Mathematical Optimization Techniques for Driving Comfort Studies
Dr Peter Riede, Markus Linke, Dr Victor Fässler, TWT GmbH, Neuhausen
Dr Dirk Adamski, DaimlerChrysler AG, Sindelfingen

14:00  “T³M – TÜV Tire Temperature Method“ applied for performance and wear optimization in chassis testing and simulation
Alexander Kraus, Markus Berkmüller, Lars Netsch, Bernhard Schick, TÜV SÜD Automotive GmbH, Garching

14:30  From Objective Vehicle Dynamics Parameters to Subjective Evaluation Criteria
Dipl-Ing Oliver Spann, Dipl-Ing Thomas Kriegel, AUDI AG, Ingolstadt

15:00  Coffee break
Development Methods II

Facilitator: Dr Erich Sagan, BMW AG, Munich

15:30 Development Methods to Reduce the Conflict between Torsional Vibrations of the Steering Wheel – Modern Chassis Design Using the New Sprinter as an Example Jochen Elser, DaimlerChrysler AG, Stuttgart

16:00 Characterization of Steering Feel
Dipl-Ing Manfred Harrer, BMW AG, Munich
Dr Peter E. Pfeffer, University of Bath, GB

16:30 Virtual Pre-Development of Mechatronic Chassis Components Illustrated by the Example of an Active Hydraulic Power Steering System
Markus Brändle, Chair of Vehicle Engineering, TU München
Markus Schachner, AUDI AG, Ingolstadt

17:00 MBS Simulation Methodology Based on Code Export for Development of Commercial Vehicle Steerings
Dipl-Ing Jan Fleischhacker, Dipl-Ing Thomas Ille, MAN Nutzfahrzeuge AG, Munich

2nd Parallel Session

Active Safety

Facilitator: Dr Volker Berkefeld, Dr. Ing. h.c. F. Porsche AG, Weissach

13:30 Analysis of Vehicle Dynamics and Yaw Moment Maximization in Skid Maneuvers
Maike Salfeld, Dr-Ing Stephan Stabrey, Robert Bosch GmbH, Stuttgart
Prof Dr-Ing Ansgar Trächtler, Control Technology and Mechatronics, University of Paderborn
14:00 Real-time Processing Vehicle State Estimation
Dipl-Ing Bastian Boßdorf-Zimmer, Dipl-Ing Lars Frömmig,
Dr-Ing Roman Henze, Prof Dr-Ing Ferit Küçükay,
TU Braunschweig

14:30 Potential of Wheel Force Measurement for Driving
Dynamics Control Systems
Dipl-Ing Mirek Göbel, BMW AG, Munich
Prof Dr-Ing Ferit Küçükay, TU Braunschweig

15:00 Coffee break

Active Chassis Systems

Facilitator: Heinrich Schürr, ZF Sachs AG, Schweinfurt

15:30 Active Geometry Control System (AGCS): A New Four
Wheel Steering System for Hyundai Sonata
Unkoo Lee, Sangho Lee, Hyundai Motor Company,
Seoul, Korea
Alexandre Català, IDIADA Automotive Technology SA,
Santa Oliva, Spain

16:00 The Semi-Active Adaptive Damper System of the
BMW X5 with Coordinated System Architecture
Markus Nyenhuis, BMW AG, Munich

16:30 Active Interface Structures for Improved Comfort in
Passenger Vehicles
Martin Thomaier, Dr Tobias Melz, Michael Matthias,
Andreas Friedmann, Fraunhofer-Institute for
Engineering Strength and System Reliability LBF,
Darmstadt

19:00 Evening Event
Friday, March 2, 2007

1st Parallel Session

Development Methods III

Facilitator: Dr Veit Held, Adam Opel GmbH, Rüsselsheim

9:00 Vehicle Simulation as Part of the “Global Chassis Control” Project
Peter Lauer, Dr Thomas Raste, Dr Peter Rieth, Continental Automotive Systems, Frankfurt/Main

9:30 Model-Based Optimization of High-Performance Sports Cars – The Impact of Thermal Tire Effects
Xavier Maume, Dufournier Technologies, Beaumont, France
Charles Miquet, IPG Automotive GmbH, Karlsruhe

10:00 Conceptual Suspension Development and Real-Time Driving Dynamics Simulation
Dr-Ing Andreas Kunert, Dipl-Phys Dipl-Ing André Pinnel
TESIS DYNAware GmbH, Munich

10:30 Coffee break

Development Methods IV

Facilitator: Christoph Schulenburg, DaimlerChrysler AG, Sindelfingen

11:00 Virtual Test Rig – Trial and Simulation Move Closer Together
Klaus Puchner, Harald Riener, Otmar Gattringer, MAGNA POWERTRAIN Engineering Center
Steyr GmbH & Co KG, St. Valentin, Austria
11:30  Determination of Assembly Component Loads in the Active Chassis Using Co-Simulation  
Dipl-Ing Georg Mack, Dr. Ing. h.c. F. Porsche AG, Stuttgart

12:00  Fatigue Life Prediction for a Front End Module using Modal Superposition Method  
Ja-suk Koo, Tae-ryong Jeon, Hun Shin,  
Hyundai Mobis Co., Ltd., Seoul, Korea

12:30  Lunch break

2nd Parallel Session

Engineering Strength / Materials

Facilitator: Thomas Nickels, MAN Nutzfahrzeuge AG, Munich

9:00  Omission with Elastomer Mountings: Reaching Conclusions on Engineering Strength  
Thorsten Brüger, Dr Heiko Pohl,  
Vibracoustic GmbH & Co. KG, Hamburg

9:30  Hybrid Approach to Virtual and Experimental Joint Testing  
Prof Dr-Ing Jan Scholten, IAMT Gruppe,  
Plauen (Headquarters), Bochum  
Dr-Ing Henning Haensel, Nils Lehnert,  
Ruhr-Universität Bochum  
Dr-Ing Gerhard Meier, AUDI AG, Ingolstadt  
Bruno Seufert, DaimlerChrysler AG, Sindelfingen  
Volker Treichel, Frank Fröhner, IAMT mbH, Plauen
10:00 Newly Developed Cast-Iron Stock with High Substitution Potential vs. Forging Stock in the Chassis Area
Dr sc techn ETH Werner Menk, Dr Mont Leopold Kniewallner, Dipl-Ing Sabine Prukner, Georg Fischer Fahrzeugtechnik AG, Schaffhausen, Switzerland

10:30 Coffee break

Chassis Systems

Facilitator: Stefan Resch, TÜV SÜD Automotive GmbH, Garching

11:00 Active Roll Stabilization Considering Customer Requirements
Dr Dirk Nissing, Dr Alois Seewald, TRW Automotive GmbH, Düsseldorf

11:30 Rotational Dampers – An Approach to Increasing the Load Volume
Dipl-Ing Heinz-Joachim Gilsdorf, Andreas Förster, ZF Sachs AG, Schweinfurt

12:00 A new Axle concept: Multi Flex Axle (MFA)
Bruno Guimard, Manufacture francaise des pneumatiques Michelin, Clermont Ferran, France

12:30 Lunch break
Plenary Session II

**Facilitator: Prof Dr Bernd Heißing, TU München, Department of Vehicle Engineering**

13:30  The Chassis of the New smart
Christoph Schulenburg, DaimlerChrysler AG, Sindelfingen

14:00  The Impact of Torque Vectoring Driveline Systems on Stability and Maneuverability in all Traction Conditions
B. Post, X. Kang, C. Cymbal, S. Turner, T. Klaus,
Honda R&D Americas, Inc., Raymond, USA

14:30  x-by-wire in the Automobile: from Electronic Wedge Brake to eCorner
Bernd Gombert, Siemens VDO Automotive, Regensburg

15:00  Coffee break

15:30  Optimization of steering behaviour through systematic implementation of customer requirements in technical targets on the basis of Quality Function Deployment
Bernhard Schick, Stefan Resch,
TÜV SÜD Automotive GmbH, Garching
Masaki Yamamoto, Ikuo Kushiro,
Toyota Motor Corporation, Toyota Aichi, Japan
Naoki Hagiwara, TÜV SÜD Japan, Tokyo

16:00  Chassis development at HONDA Racing F1 Team
Prof. Gary Savage, Honda Racing F1 Team, Brackley, GB

16:30  Future Active Safety Technologies from the Perspective of VOLVO
Ekkehard Schwartz, VOLVO Car Corporation,
Gothenburg, Sweden

17:00  Farewell
Venue

Technische Universität München
Boltzmannstr. 15
85748 Garching near Munich

Participation fee

€ 990.- plus VAT (if applicable)
The fee includes congress documentation, lunch and beverages during the breaks as well as dinner at the evening event on March 1, 2007.

Congress languages

German, English and French (simultaneous translation)
Registration: Fax +49 89 5791-3316

I hereby register to the congress chassis.tech 2007 on March 1 and 2, 2007 in Garching near Munich*.

Name ..........................................................................................................................
First name ....................................................................................................................
Company ....................................................................................................................
Department ...............................................................................................................  
Street .........................................................................................................................
Country / Zip Code / City ............................................................................................
Phone .........................................................................................................................
Fax ...............................................................................................................................  
Email ...........................................................................................................................

Invoice address if different from above:

........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................

* € 990.- plus VAT (if applicable)

Cancellation policy: Cancellation of registration up to 14 days prior to the commencement of the event at the latest is free of charge. In case of cancellation beyond this deadline and up to the third working day prior to the event, 50% of the invoice amount is due for payment. In the case of cancellation beyond this deadline, the full amount of the invoice shall be due. I accept changes in the program and the general event terms and conditions of TÜV SÜD Automotive GmbH published on www.tuev-sued.de/automotive.

I would like to take part in the evening event:  □ Yes  □ No

Please book a room from ....................... to ....................... at the

□ “Achat Hotel München Airport” at a special rate of € 47.50 per night.
□ “Victor’s Residenz Hotel Munich” in Unterschleißheim at a special rate of € 114.- per night.

Date / Signature
TÜV SÜD Automotive GmbH

Daimlerstr. 11
85748 Garching
Germany

For registering your attendance of the congress, information on the accompanying exhibition or question regarding accommodation, please contact:

Christine Joachim
Phone: +49 89 5791-3308
Fax: +49 89 5791-3316
Email: christine.joachim@partner.tuev-sued.de

For technical questions, please contact:

Bernhard Schick
Phone: +49 89 32950-672
Email: Bernhard.Schick@tuev-sued.de