



Fraunhofer

ICT

air  
2010  
bag



PROGRAM

10<sup>th</sup> International Symposium  
and Exhibition on Sophisticated  
Car Occupant Safety Systems

Karlsruhe, Germany  
Congress Center

**2010, December 6 - 8**

**Program Committee**

**Dr. Baroto Adiprasito**  
Volkswagen AG

**Michael Bischoff**  
Takata Petri AG

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Autoliv B.V. & Co. KG

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Karlsruhe, D



## 10<sup>th</sup> International Symposium and Exhibition on Sophisticated Car Occupant Safety Systems

### Welcome

Sophisticated car occupant systems such as airbags and belt restraint systems represent the most rapidly increasing market for safety devices in recent times. Although the benefits are well known to experts there is clearly a need for close cooperation between all interested parties.

The 10<sup>th</sup> Airbag Symposium in 2010 will again be a meeting place for engineers, scientists, legislators, managers and marketing experts to exchange information, to make and improve contacts, to stimulate further progress and to promote advanced car passenger safety systems on an impartial platform.

The Fraunhofer Institute for Chemical Technology (ICT) is the leading independent research and development facility for airbag technology and testing. As a division of Fraunhofer, Europe's largest organization for applied and contract research, the Fraunhofer ICT offers a unique event for automobile industry suppliers and public authorities.

**Welcome again to Karlsruhe, Germany,  
and the world of Airbag 2010.**

Jochen Neutz  
Chairman of the Symposium

### Registration

Please return the enclosed **registration form**. You will then receive an **invoice**.

**Registration fees** (including proceedings, coffee breaks, lunch, evening receptions), depending on date of arrival of registration form at ICT

**\* up to November 12, 2010**

**EURO 950,-- (incl. 19% VAT)**

**\* up to November 26, 2010**

**EURO 1.050,-- (incl. 19% VAT)**

Participation cannot be guaranteed for registrations arriving after November 26, 2010.

A fee of EURO 500,-- will be charged for cancellations after November 26, 2010. No-shows will be charged the complete fee.

### Accommodation

will be managed by **HORE Hotel Reservation**, Weingartener Str. 70, D-76229 Karlsruhe, Phone (07 21) 48 23 56, Fax (07 21) 48 26 14 (International access: +49)

E-mail [horehotelreservation@t-online.de](mailto:horehotelreservation@t-online.de)

An application form is enclosed.

**Online reservation:**

[www.hore-hotel-reservation.de/airbag2010.html](http://www.hore-hotel-reservation.de/airbag2010.html)

### Conference Office

is located in the **foyer of the Stadthalle** and may be reached **from December 6 to December 8** by

**Phone** (07 21) 37 20 - 44 43

or (07 21) 37 20 - 44 41

**Fax** (07 21) 37 20 - 59 50

(International access: +49)

### Check In / Welcome Reception

Please check in at the conference office on **Monday, December 6 between 13.00 and 20.00 h.**

All participants are cordially invited to the **Welcome Reception** in the foyer of the Stadthalle on **Monday, December 6, 18.00 - 21.00 h.**

**Conference Languages** English, German - **Simultaneous Interpretation**

### Proceedings

**One copy** of the proceedings is **included** in the registration fee.

(Additional copies EURO 100,--)

<b>Advanced Label Technologies B.V.</b>	Utrecht, NL
<b>apos GmbH &amp; Co. KG</b>	Hösbach, D
<b>Autoliv Inc.</b>	Stockholm, SE
<b>Avery Dennison IAPD</b>	Brunswick, Ohio, USA
<b>Berstscheiben Schlesinger GmbH</b>	Schalksmühle, D
<b>BS&amp;B Safety Systems B.V.</b>	Den Haag, NL
<b>Conntronic GmbH</b>	Welden, D
<b>Continental</b>	Regensburg, D
<b>CTAG Automotive Technologiezentrum Galicien</b>	Düsseldorf, D
<b>Daimler AG</b>	Sindelfingen, D
<b>Electrovac Curamik GmbH</b>	Regensburg, D
<b>ESI Group</b>	Eschborn, D
<b>FCI Motorized Vehicles</b>	Paris, F
<b>Fraunhofer-Institut für Chemische Technologie ICT</b>	Pfinztal, D
<b>Gabel – M.E.C.A. GmbH &amp; Co. KG</b>	Euskirchen, D
<b>Hirtenberger Automotive Safety GmbH &amp; Co KG</b>	Hirtenberg, A
<b>IGAPE Institut für Wirtschaftsförderung Galicien</b>	Düsseldorf, D
<b>Indet Safety Systems a.s.</b>	Vsetin, CZ
<b>Infineon Technologies AG</b>	Munich, D
<b>Invista Deutschland GmbH</b>	Östringen, D
<b>iSi Automotive GmbH</b>	Wien, A
<b>Jinzhou Jinheng Automotive Safety</b>	Liaoning Province, PRC
<b>Key Safety Systems Deutschland GmbH</b>	Raunheim, D
<b>KSL Keilmann Sondermaschinenbau GmbH</b>	Lorsch, D
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<b>Rhodium GmbH</b>	Weißenburg, D
<b>Robert Bosch GmbH</b>	Stuttgart, D
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<b>Takata-Petri AG</b>	Aschaffenburg, D
<b>TASS (TNO Automotive Safety Solutions)</b>	Delf, NL
<b>TechnologieRegion Karlsruhe GbR</b>	Karlsruhe, D
<b>TRW Automotive GmbH</b>	Alfdorf, D
<b>Valient Automotive Market Research</b>	New York, USA
<b>Weil Engineering GmbH</b>	Müllheim, D



## Program

Monday, December 6, 2010

Tuesday, December 7, 2010

### Monday, December 6, 2010

- 11.30 – 13.00**      **Press Meeting (registered journalists only)**
- 13.30 – 18.00**      **Workshop »Airbag – Retten ohne Risiko?« für Rettungskräfte mit »Airbag-Update«, Einsatzberichten und Erfahrungsaustausch (in GERMAN only)**  
POC: Rolf-Dieter.Erbe@berliner-feuerwehr.de
- 14.30 – 18.00**      **Workshop »Igniter Technique«**  
(Participation on separate invitation)
- 14.30 – 18.00**      **Workshop »Safety aspects of energy storage systems for automotive applications«**  
(Participation on separate invitation)
- 18.00 – 21.00**      **Welcome Reception**  
for all participants  
(Symposium, Workshops, Exhibition)

### Tuesday, December 7, 2010

#### Opening Session

- 09.30 – 09.45**      **Greeting and Opening**  
J. Neutz  
Chairman of »airbag 2010«  
B. Hefer  
Moderator of »airbag 2010«  
Fraunhofer ICT, Pfinztal, D
- 09.45 – 10.00**      **Welcome Speeches**
- 10.00 – 10.30**      **V 1**      **Key Note**  
**MOBILITY OF THE FUTURE**  
T. Weber  
Daimler AG, Stuttgart, D
- 10.30 – 11.00**      **Coffee Break**

**1<sup>st</sup> Session**

**SENSOR SYSTEMS AND ELECTRONICS**

Session Coordinator: M. Strugala  
Robert Bosch GmbH, Stuttgart, D

- 11.00 – 11.25      V 2      MULTIFUNCTIONAL LIDAR SENSORS  
IMPROVE PASSENGER SAFETY AT LOW COST**  
H. Spies  
Ingeurbüro Spies, Hohenwarth, D
- 11.25 – 11.50      V 3      REDUCTION OF SLEEP RELATED ACCIDENTS BY  
MONITORING DRIVER STEERING BEHAVIOR**  
A. Haeussler  
Robert Bosch GmbH, Stuttgart, D
- 11.50 – 12.15      V 4      AIRBAG CONTROL UNIT AB *LIGHT* FOR  
EMERGING MARKETS**  
Xiaojian Yang  
Bosch Automotive Products (Suzhou) Co. Ltd., PRC

**12.15 – 13.00      Poster Session**  
Session Coordinator: H. Spies, M. Bischoff,  
U. Tschäschke

**13.00 – 14.30      Lunch Break**

**2<sup>nd</sup> Session:**

**ACCIDENT RESEARCH**

Session Coordinator: Alexander Heilig  
TRW Automotive GmbH, Alfdorf, D

- 14.30 – 14.55      V 5      ACCIDENT RESEARCH IN THE PAST  
AND FUTURE AIMS**  
K. Langwieder  
International Safety Consulting, München, D
- 14.55 – 15.20      V 6      ANALYSIS OF FAR-SIDE IMPACTS IN EUROPE  
– OCCURRENCE, INJURY OUTCOME AND  
COUNTERMEASURES**  
U. Sander, O. Boström  
Autoliv Research, Vårgårda, SE
- 15.20 – 15.45      V 7      DRIVER-ASSISTANCE SYSTEMS – CAUGHT  
BETWEEN ACTIVE TECHNICAL ASSISTANCE  
AND INDIVIDUAL RESPONSIBILITY**  
K. Nehm  
Deutsche Akademie für Verkehrswissenschaft,  
Hamburg, D
- 15.45 – 16.15      Coffee Break**



## Program

Tuesday, December 7, 2010

16.15 – 17.45

### 3<sup>rd</sup> Session:

Panel Discussion

#### **ACTIVE SAFETY – QUO VADIS?**

Participants:

K. Nehm (Deutsche Akademie für Verkehrswissenschaft)

H.-P. Krüger (Universität Würzburg)

P. Kropf (Bosch GmbH),

U. Widmann (Audi AG)

17.45

#### **Awards**

18.15

#### **Evening Reception**

**Fax: +49 - (0) 7 21 / 4 6 40 - 1 20**

**Fraunhofer-Institut für  
Chemische Technologie • ICT  
Manuela Wolff  
P. O. Box 1240**

**D - 76318 Pfinztal**





\_\_\_\_\_  
Last name

\_\_\_\_\_  
First name

\_\_\_\_\_  
Title / Position

Registration fee must be paid upon receipt of the invoice

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Signature

Company / Authority / Complete Address

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Participation (please tick)

**Welcome Reception**

Monday, Dec. 6, 6.00 p. m.  
(incl. in the registration fee)

\_\_\_\_\_  
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It is agreed that pictures taken during this event may be published.

# Accommodation

## 10<sup>th</sup> International Symposium and Exhibition on Sophisticated Car Occupant Safety Systems

December 6 - December 8, 2010 • Karlsruhe, Germany

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C ****	Schlosshotel Classic	DZ/DBL 160,-- Euro
D1 ****	Queens Komfort	EZ/SGL 122,-- Euro
D2 ****	Queens Standard	EZ/SGL 157,-- Euro
E ****	Residenz	DZ/DBL 184,-- Euro
F ****	Santo	EZ/SGL 169,-- Euro
G ****	Avisa	DZ/DBL 146,-- Euro
H ****	Rio Komfort	EZ/SGL 133,-- Euro
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I2 ****	Kübler Komfort	DZ/DBL 120,-- Euro
I3 **	Kübler Standard	DZ/DBL 119,-- Euro
K ****	Ambassador	EZ/SGL 99,-- Euro
L ****	Royal	EZ/SGL 129,-- Euro
M ****	Ibis	DZ/DBL 150,-- Euro
N ****	Alfa	DZ/DBL 115,-- Euro
		EZ/SGL 82,-- Euro
		DZ/DBL 105,-- Euro
		EZ/SGL 73,-- Euro
		DZ/DBL 89,-- Euro
		EZ/SGL 80,-- Euro
		DZ/DBL 100,-- Euro
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**D - 76229 Karlsruhe**

Platz für Visitenkarte / Personal card

**4<sup>th</sup> Session:**

**TRENDS IN EMERGING AND ESTABLISHED  
MARKETS**

Session Coordinator: P. Hutmann

BMW AG, München, D

- |                      |             |  |
|----------------------|-------------|--|
| <b>08.30 – 08.55</b> | <b>V 8</b>  | <b>FUTURE VEHICLE SAFETY ASSESSMENT FOR<br/>CUSTOMER INFORMATION</b><br>A. Seeck<br>Euro NCAP, Brussels, B   |
| <b>08.55 – 09.20</b> | <b>V 9</b>  | <b>TRENDS OF THE ACCIDENT SCENE IN EUROPE<br/>AND THE WORLD – CONSEQUENCES FOR<br/>VEHICLE DESIGN</b><br>R. Zobel<br>Volkswagen AG, Wolfsburg, D   |
| <b>09.20 – 09.45</b> | <b>V 10</b> | <b>BENEFIT OF REVERSIBLE BELT PRE-<br/>PRETENSIONING FOR DIFFERENT PRE-CRASH<br/>SCENARIOS – REDUCTION OF OCCUPANT<br/>DISPLACEMENT AND THE EFFECT ON INJURY<br/>SEVERITY</b><br>M. Mages, M. Seyffert, U. Class<br>TRW Automotive, Alfdorf, D |
| <b>09.45 – 10.15</b> |             | <b>Coffee Break</b>  |

**5<sup>th</sup> Session:**

**PREVIEWING SAFETY AND PEDESTRIAN PROTECTION**

Session Coordinator: S. Brock

Autoliv, Dachau, D

- |                      |             |   |
|----------------------|-------------|---|
| <b>10.15 – 10.40</b> | <b>V 11</b> | <b>COOPERATIVE SYSTEMS FOR PREVENTIVE TRAFFIC SAFETY</b><br>S. Zecha<br>Continental Safety Engineering International,<br>Alzenau, D   |
| <b>10.40 – 11.05</b> | <b>V 12</b> | <b>STEREO VISION SYSTEM FOR PEDESTRIAN PROTECTION BY BRAKING</b><br>S. Hadi<br>Autoliv Research, Vårgårda, SE   |
| <b>11.05 – 11.30</b> | <b>V 13</b> | <b>PEDESTRIAN PROTECTION SYSTEM PPS-pSAT – INNOVATIVE SENSING PRINCIPLE BASED ON PRESSURE SATELLITES</b><br>B. Haupt, T. Tyroller, L. Pfau, T. Goetz<br>Continental Automotive, Regensburg, D<br>A. Hürland<br>Daimler AG, Stuttgart, D |
| <b>11.30 – 11.55</b> | <b>V 14</b> | <b>SITUATION ANALYSIS FOR VULNERABLE ROAD USER PROTECTION USING A PEDESTRIAN MOTION MODEL</b><br>N. Tiemann<br>Robert Bosch GmbH, Stuttgart, D  |
| <b>11.55 – 13.25</b> |             | <b>Lunch Break</b>  |

**6<sup>th</sup> Session:**

**DEVELOPMENT AND TESTING / SIMULATION**

Session Coordinator: B. Adiprasito

Volkswagen AG, Wolfsburg, D

- |                      |             |  |
|----------------------|-------------|--|
| <b>13.25 – 13.50</b> | <b>V 15</b> | <b>PROSPECTS FOR FULFILMENT OF EJECTION MITIGATION (FMVSS226)</b><br>R. Heuschmid, D. Bello, J. Baumhauer,<br>T.-B. Vogel, G. Rasch, B. Heudorfer<br>Takata-Petri AG, Ulm, D |
| <b>13.50 – 14.15</b> | <b>V 16</b> | <b>NUMERICAL SIMULATION OF INJURY MECHANISMS AND POTENTIAL FOR SAFETY GAINS IN EJECTIONS</b><br>J. P. Borgmann<br>Volkswagen AG, Wolfsburg, D                                |
| <b>14.15 – 14.40</b> | <b>V 17</b> | <b>UPDATE CHARACTERIZATION AND EVALUATION OF FRONTAL CRASH PULSES</b><br>L. Kübler, S. Gargallo<br>TRW Automotive, Alfdorf, D  |
| <b>14.40 – 15.05</b> | <b>V 18</b> | <b>THE IMPACT OF DYNAMIC DRIVING SITUATIONS ON THE SAFETY POTENTIAL OF OCCUPANT RESTRAINT SYSTEMS</b><br>R. Bachmann, M. Paurevic, M. Fehring<br>Daimler AG, Sindelfingen, D |
| <b>15.05 – 15.30</b> | <b>V 19</b> | <b>THE DUMMY OOP PENDULUM - AN ALTERNATIVE TO THE OOP TEST?</b><br>H. Hofman, F. Wollny, A. Heym<br>Takata-Petri AG, Berlin, D   |
| <b>15.30</b>         |             | <b>Closing Remarks</b>   |

Posters will be presented in the Foyer of the Conference Hall during the Symposium. A special POSTER SESSION will be held on Tuesday, December 7, 12.15-13.00 h.

- P 20**      **SAFE DRIVING WITH MOTORCYCLE ABS**  
A. Mueller, A. Georgi  
Robert Bosch GmbH, Stuttgart, D
- P 21**      **„FIT FOR FUNCTION“ SILICONES:  
NEW COATINGS FOR AIRBAGS**  
P. Defaux, B. Bordes  
Bluestar Silicones, Lyon, F
- P 22**      **FUNCTIONAL SAFETY FOR ICs IN AIRBAG  
APPLICATIONS**  
T. Dittfeld, D. Hammerschmidt  
Infineon Technologies AG, München, D
- P 23**      **TARGET: ZERO DEATHS**  
A. F. Charles  
ACE Consultancy, Winsford, GB
- P 24**      **MOVEMENT IN THE PRE-CRASH SITUATION –  
A SIMULATION RESEARCH WITH A REVERSIBLE  
PRE-SAFE® PULSE SYSTEM**  
M. Woldrich  
Daimler AG, Sindelfingen, D
- P 25**      **VIRTUAL PROTOTYPING OF CURTAIN AIR-  
BAGS USING FPM: STATE OF THE ART AND  
PERSPECTIVES**  
E. Gai  
Key Safety Systems, Jouy en Josas, F  
A. Tramecon, C. Thibaud  
ESI Group, Rungis, F
- P 26**      **SIMULATION TOOLS FOR INTEGRATED  
SAFETY DESIGN**  
R. Bours  
TASS, Rijswijk, NL  
M. Tideman  
TNO, Helmond, NL

P 27

**INVESTIGATION OF THERMITE MIXTURES  
FOR AN OPTIMIZED IGNITION OF GAS  
GENERATORS**

V. Weiser, S. Kelzenberg, A. Lity, A. Raab, E. Roth  
Fraunhofer ICT, Pfinztal, D

P 28

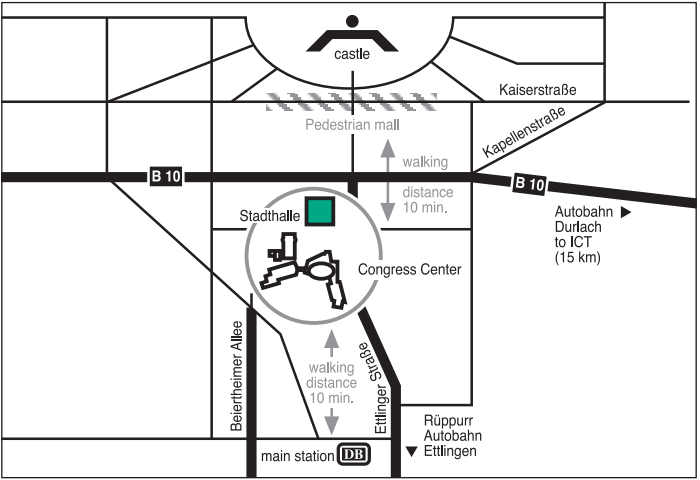
**THE NEXT GENERATION OF FRONTAL  
AIRBAG INFLATORS**

J. Vetter  
TRW Airbag Systems GmbH, Aschau, D

P 29

**THE GLOBAL AUTOMOTIVE AIRBAG MARKET  
2010 – 2020 – A VIEW INTO EMERGING TECH-  
NOLOGIES, FUTURE MARKET TRENDS &  
CHANGING SUPPLY CHAIN DYNAMICS**

S. D. Upham  
Valient Solutions, Rochester NY, USA



Karlsruhe is located approx. 120 km (80 miles) south of Frankfurt/Frankfurt International Airport just beside the Autobahn A5, and is also connected to Frankfurt via express train (IC or ICE).

Other convenient airports are:  
 Strasbourg (F) (approx. 100 km) and Stuttgart (D) (approx. 90 km)



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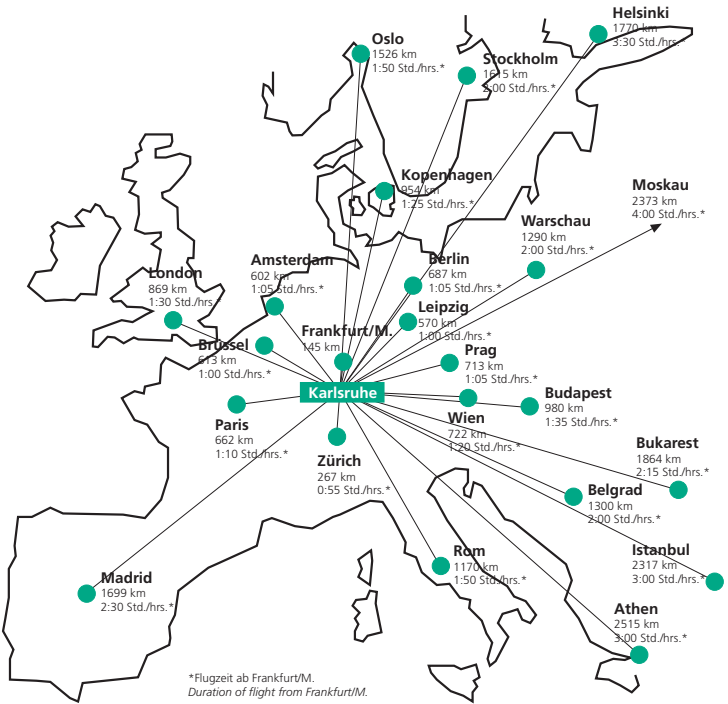
- Main station (Hauptbahnhof) S 1, S 4, S 11, 2
- City center (Stadtmitte) S 1, S 4, S 11, 2
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### Conference Management

Fraunhofer-Institut für  
Chemische Technologie ICT  
Attn. Manuela Wolff  
P. O. Box 1240  
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Federal Republic of Germany

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Web site: www.ict.fraunhofer.de  
www.airbag2000plus.de

### Exhibition Management

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