

PROGRAM

7th International Symposium
and Exhibition on Sophisticated
Car Occupant Safety Systems



air2004
bag

Karlsruhe, Germany
Congress Center

2004, November 29 - December 01



Fraunhofer

Institut
Chemische Technologie

Program Committee

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Autoliv, Pont-de-Buis, F

Welcome

Sophisticated car occupant systems like airbags and belt restraint systems are the most increasing safety devices in recent times. Although the benefits are well-known by experts, a need of close cooperation between all interested parties is undoubtedly necessary.

The 7th Airbag Symposium in 2004 will again be the market place for engineers, scientists, legislators, managers and marketing people to exchange information, to get and to improve contacts, to stimulate further progress and to promote advanced car passenger safety systems on a neutral stage.

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

Welcome again in Karlsruhe, Germany, meeting the world of Airbag 2004.

Dr.-Ing. Karl-Friedrich Ziegahn
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 arrival of the registration at ICT

* **up to November 2, 2004**

EURO 950,— (incl. 16% VAT)

* **up to November 19, 2004**

EURO 1.050,— (incl. 16% VAT)

Participation cannot be guaranteed for registrations arriving after November 19, 2004.

A fee of EURO 400,— will be charged for cancellations after November 22, 2004. No-shows will be charged with 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 e-mail horehotelreservation@t-online.de An application form is enclosed.

Conference Office

located in the **foyer of the Stadthalle** and may be reached **from November 29 to December 1** 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, November 29** between **13.00 and 20.00 h.** All participants are cordially invited to the **Welcome Reception** in the foyer of the Stadthalle on **Monday, November 29, 18.00 - 20.30 h.**

Conference Languages

English, German - **Simultaneous Interpretation**

Proceedings

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

(Additional copies EURO 159,—, subscription price during the Symposium EURO 130,—)

ACTS GmbH & Co. KG Advanced Car Technology Systems	Sailauf, D
Advanced Label Technologies	Utrecht; NL
Autoliv Inc.	Stockholm, SE
Berstscheiben Schlesinger GmbH	Schalksmühle, D
CAR TRIM	Plauen, D
Conti Temic microelectronic GmbH	Nürnberg, D
CTS Automotive Products	Glasgow, UK
DaimlerChrysler AG	Sindelfingen, D
Davey Bickford SNC	Hery, F
Delphi Delco Electronics Europe GmbH	Wuppertal, D
Delphi Deutschland GmbH	Wuppertal, D
DuPont Company	Wilmington, DE, USA
Electrovac	Passau, D
FLAMM AG	Aachen, D
Fraunhofer-Institut für Chemische Technologie ICT	Pfinztal, D
Harris Interactive	Rochester, USA
Hirtenberger Automotive Safety	Hirtenberg, A
HTI Maschinen- und Apparatebau GmbH	Annweiler am Trifels, D
ITE International Electronics & Engineering	Luxembourg, L
IMECO AM GmbH	Hösbach, D
Infineon Technologies AG	München, D
Instron Structural Testing Systems GmbH	Darmstadt, D
Intelligent Mechatronic Systems Inc.	Waterloo, CAN
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iSi Automotive GmbH	Wien, A
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König Metall GmbH & Co. KG	Gaggenau, D
KSL Keilmann Sondermaschinenbau GmbH	Lorsch, D
LIMESS Messtechnik und Software GmbH	Pforzheim, D
Linde AG	Höllriegelskreuth, D
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Quadrant CMS	Tielt, B
Rhodium GmbH	Weißenburg, D
Robert Bosch GmbH	Stuttgart, D
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SCHOTT Electronic Packaging GmbH	Landshut, D
Siemens VDO Automotive AG	Regensburg, D
TAKATA-PETRI AG	Aschaffenburg, D
TechnologieRegion Karlsruhe	Karlsruhe, D
TRW Automotive GmbH	Alfdorf, D
Weinberger Deutschland GmbH	Karlsruhe, D
Zodiac Aérazur - Airbags Division	Pusignan, F



Program

Monday, November 29, 2004
Tuesday, November 30, 2004

Monday, November, 29, 2004

- 11.30 – 13.00 Press Meeting (registered journalists only)
- 13.00 Opening of the Exhibition
- 14.30 – 18.00 Workshop "Igniter Technique"
Specification and Standardization (Interfaces, Components, Tests for Reliability)
(Participation on separate invitation)
- 14.30 – 18.00 Workshop "Airbags – Rescue Operations and Related Risks" addressing Fire-Brigades, Ambulances and Rescue Forces
(Participation on separate invitation)
- 18.00 – 21.00 Welcome Reception
for all participants
(Symposium, Workshops, Exhibition)

Tuesday, November, 30, 2004

- 09.30 – 09.45 Welcome and Opening
K.-F. Ziegahn,
Fraunhofer ICT, Pfinztal, D
- 09.45 – 10.05 Greeting addresses
- 10.05 – 10.35 V 1 Key Lecture
Potential for Enhanced Safety Improvement
U. Seiffert
WITech Engineering GmbH, Braunschweig, D
- 10.35 – 11.00 Coffee Break
- 11.00 1. Session
General Issues
Chairman: Josef Haberl, BMW AG, D
- 11.00 – 11.25 V 2 Active Safety Technology – How Big is the Safety Benefit?
R. Medford
NHTSA, Washington, USA
- 11.25 – 11.50 V 3 International Product Liability Law – The Virus Spreads!
T. Smith
Lungershausen & Smith, Böblingen, D



Program

Tuesday, November 30, 2004

- 11.50 – 12.15 V 4 Airbag & Co - Growth without Limits? – Trends, Challenges and Potentials in our Industry
B. Werner
Autoliv GmbH, Dachau, D
- 12.15 – 14.00 Lunch Break
- 14.00 2. Session
Field Experiences and Regulations Affecting Design and Concepts
Chairman: Werner Schmidt, AUDI AG, Ingolstadt, D
- 14.00 – 14.25 V 5 IIHS New Side Impact Test Procedure and Results
S. Ferguson
IIHS, Arlington, USA
- 14.25 – 14.50 V 6 Study of Real World Occupant Postures and Passenger Bracing Behaviour
R. Morris, G. Cross, L. Bingley
MIRA Ltd., Nuneaton, GB
- 14.50 – 15.15 V 7 Real World Performance of Newer Model Frontal Airbags in the United States
S. Ferguson
IIHS, Arlington, USA
- 15.15 – 15.40 V 8 A Study into the Effectiveness of Real Time Control when Applied to Restraint System Performance in Frontal Crashes
J. Cooper
TNO Automotive Safety Systems, Delft, NL
- 15.40 Airbag Award Ceremony
- 15.50 Coffee Break / Poster Session
- 16.20 3. Session
Inflating Gas Generating Technology
Chairman: Ulrich Tschäsckhe, DaimlerChrysler AG, Sindelfingen, D
- 16.20 – 16.45 V 9 New Generation of Nitrocellulose-Based and Polymer-Bounded Propellants
H. Andres, J. Rebetez, A. Skriver, B. Stucki
Nitrochemie Wimmis AG, Wimmis, CH



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Tuesday, November 30, 2004
Wednesday, December 01, 2004

- 16.45 – 17.10 V 10 **Silicon Initiator, from the Idea to Functional Tests**
H. Laucht
TRW Airbag Systems GmbH, Aschau/Inn, D
H. Bartuch
CiS Zentrum für Mikrosensorik gGmbH, D
D. Kovalev
TU München, München, D
- 17.10 – 17.35 V 11 **Compressed Gas Technology for Airbag Applications**
M. Bohn
Linde AG, Höllriegelskreuth, D
- 17.35 – 18.00 V 12 **Steam Bag – a New Concept for Environmental Safe Filling of Airbags**
K.-F. Ziegahn, J. Neutz
Fraunhofer ICT, Pfinztal, D
F. Flamm, F. Richarts
Flamm AG, Aachen, D
- 18.00 – 18.25 V 13 **Versatility of a Two Chamber Gasgenerator for Airbag Applications**
F. Beteille, F. Buyer, P. Cord
SEVA Technologies, Paris, F
M. Niehaus, O. Greeb, K. Menke
Fraunhofer ICT, Pfinztal, D
- 18.30 – 22.00 **Evening Reception
Visit of Exhibition and Poster Session**
- Wednesday, December 1, 2004**
- 08.30 **4. Session
Sensor Systems**
Chairman: Bernhard Mattes, Robert Bosch GmbH, Stuttgart, D
- 08.30 – 08.55 V 14 **The Potential of Optical Sensors for Future Restraints Systems**
T. Görnig
Conti Temic microelectronic GmbH, Ingolstadt, D
- 08.55 – 09.20 V 15 **Can Occupant Protection Systems Benefit from Pre-Crash Sensors?**
S. Al-Samarae
TAKATA-PETRI AG, Aschaffenburg, D
M.P. Bruce
TAKATA Electronic Safety Systems,
Farmington Hills, USA



Program

Wednesday, December 01, 2004

- 09.20 – 09.45 V 16 **iBolt Technology – A Weight Sensing System for Advanced Passenger Safety**
K. Kasten, A. Stratmann, K. Dirscherl, M. Munz
Robert Bosch GmbH, Reutlingen, D
R. Jones
Robert Bosch Corp., Farmington Hills, USA
- 09.45 – 10.10 V 17 **Crash Impact Sound Sensing (CISS) – Higher Crash Discrimination Performance at Lower Cost**
M. Feser, C. Wieand
Siemens VDO Automotive AG, Regensburg, D
- 10.10 **Coffee Break / Poster Session**
- 10.40 **5. Session
Airbag System Design**
Chairman: Hans Spies, Ingenieurbüro Spies, Hohenwart, D
- 10.40 – 11.05 V 18 **KISS – An Universal Approach to the Development and Design of Occupant Restraint Systems**
C. Weiss, F. Keck
AUDI AG, Ingolstadt, D
A. Neubohn
Volkswagen AG, Wolfsburg, D
A. Kuhn
Andata Entwicklungstechnologie GmbH & Co.
KG, Hallein, A
- 11.05 - 11.30 V 19 **OOP-Simulation - A Tool to Design Airbags? Current Capabilities in Numerical Simulation**
B. Beesten, R. Reilink
Volkswagen AG, Wolfsburg, D
A. Hirth
DaimlerChrysler AG, Sindelfingen, D
R. Remensperger
Porsche AG, Weissach, D
D. Rieger
BMW AG, München, D
G. Seer
AUDI AG, Ingolstadt, D
- 11.30 – 11.55 V 20 **A Knee Air Bag for Enhancing Frontal Impact Protection**
J. Hoffmann
TG Europe N.V., Saarbrücken, D
M. Hashimoto
Toyoda Gosei Co. Ltd., Nagoya, JAP

- 11.55 – 12.20 V 21 **Different Polymers for Airbag Cushion Materials – An Evaluation of Static, Dynamical and Thermal Properties**
R. Köhnen
Polyamide High Performance GmbH, Wuppertal, D
- 12.20 – 14.00 **Lunch Break**
- 14.00 **6. Session
Future of Occupant Protection**
Chairman: Marcus Biewendt, Volkswagen AG, Wolfsburg, D
- 14.00 – 14.25 V 22 **iVision™ – Video Interior Occupant Sensor for Dynamic Out-of-Position Sensing and Occupant Classification**
H. Freienstein, T. Engelberg, H.-D. Bothe,
Robert Bosch GmbH, Hildesheim, D
R. Watts
Robert Bosch Corp., USA
- 14.25 – 14.50 V 23 **Individual Safety**
C. Rüdebusch
DaimlerChrysler AG, Sindelfingen, D
- 14.50 – 15.15 V 24 **Potential of Adaptive Restraints in Frontal Collisions**
M. Gonter, R. Zobel
Volkswagen AG, Wolfsburg, D
U. Spies
AUDI AG, Ingolstadt, D
- 15.15 – 15.40 V 25 **Sensor and Electronic Development Drives Occupant Protection and Rules in New Areas**
H. Spies
Ingenieurbüro Spies, Hohenwart, D
- 15.40 **Closing Remarks**

Thursday, December 2, 2004

- 09.30 – 12.30 **Visit of Fraunhofer ICT
(please tick on your registration form
whether you want to participate)**

Posters will be presented in the foyer during the whole Symposium. Special POSTER SESSIONS will be held on **Tuesday, November 30, 15.50 h – 16.20 h** and on **Wednesday, December 1, 10.10 h – 10.40 h** (during the Coffee Breaks).

Chairman:
**Stefan Brock, Autoliv GmbH,
Dachau, D**

- P 26 **The Re-Use of Air-Bags**
A.F. Charles
ACE Consultancy, Winsford, GB
- P 27 **Fast Spectroscopic Methods for a better Understanding of Gas Generator Combustion**
V. Weiser, W. Eckl, N. Eisenreich, S. Kelzenberg,
E. Roth
Fraunhofer ICT, Pfinztal, D
- P 28 **Precrash-Sensing as Information Platform**
T. Sohnke, J. Sans Sangorriin, J. Hötzel, M. Bunse,
M. Theisen, A. Kuttengerger, P. Knoll
Robert Bosch GmbH, Frankfurt, D
- P 29 **Fast Tensile Test on Polymers**
L. Deimling, A. Blanc, N. Eisenreich
Fraunhofer ICT, Pfinztal, D
- P 30 **Development and Testing of an Aspirated Airbag Inflator Module**
L.-Y. Yuan, D.-M. Chang, C.-W. Wong, Y.-T. Lin
Chung-Shang Institute of Science and
Technology, Taoyun, ROC
- P 31 **Inflatable Head Restraint**
J.Y.M. Pan
InnoBrain Technology Co. Ltd., Taiwan, ROC
J.-P. Wang
Chung-Shang Institute of Science and
Technology, Lung-Tan, ROC

- P 32 On the Simulation of Out-of-Position Load Cases with the ALE Method**
A. Haufe
DYNAMore GmbH, Stuttgart, D
- P 33 Meeting the Need for Lighter Weight and Thinner Inflatable Curtain Airbags**
G. Budden
Dow Corning Ltd., Barry, GB
- P 34 Early Discrimination of Side-Impacts Using Wavelet Analysis of Signals from Piezoelectric Stress-Wave Sensors Applied to Vehicle Windshields**
P.W. Kithil
Advanced Safety Concepts Inc., Santa Fe, USA
R. Jones, R. Frye
Commodicast Inc., Santa Fe, USA
- P 35 High Precision Airbag Triggering and Data Monitoring**
B. Streich
HuDe Datenmesstechnik GmbH, Erkelenz, D
- P 36 Strategies for Enabling Curtain Technology to Meet Future Requirements**
G. Mowry, P. Wallis, D. Shilliday
Zodiac Automotive US Inc., Tempe, USA
- P 37 Pyrotechnic Devices have Application Beyond Restraints in Adding Safety to the Vehicle**
M. Johnson, D. Green, B. Smith, B. Parks,
T. Martersteck, M. Jordan
Autoliv, Ogden, USA
- P 38 Rhodorsil TCS, a New Silicone Range**
L. Dumont, F. Magd
Rhodia Silicones, Saint Fons, F
- P 39 Airbag – High Speed Laser Cutting**
R. Möller
Schuler Held Lasertechnik, Dietzenbach, D

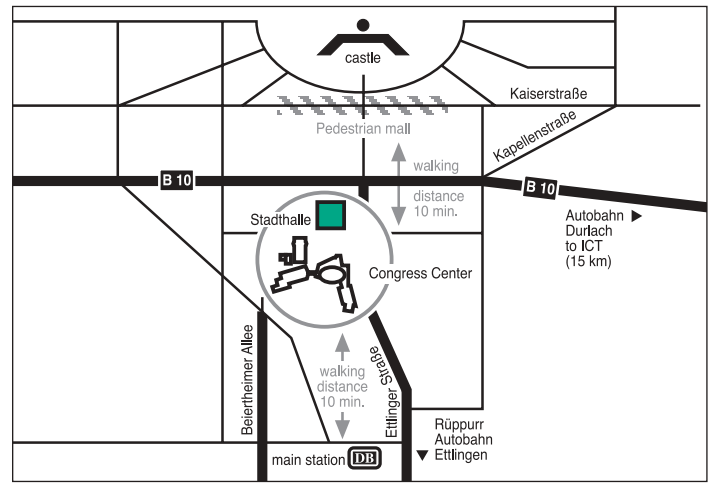
- P 40 Contactless and Fullfilled 3D-Deformation Measurement for Impact and Crash Tests**
R. Lichtenberger
LIMESS Messtechnik und Software GmbH,
Pforzheim, D
- P 41 Effect of Different Factors on Combustion Rate of Energetic Composites based on Ammonium Nitrate for Airbags**
Y.M. Michailov, N.A. Plishkin, V.G. Korostelev,
V.V. Aleshin, L.V. Ganina
Institute of Problems of Chemical Physics,
Chernogolovka, RUSSIA
- P 42 Principles of Creation of Smokeless Gas Generating Compositions Free of Toxic Combustion Products**
D.B. Lempert, G.B. Manelis, H.N. Nechiporenko,
V.G. Shteinberg, I.N. Zyuzin
Institute of Problems of Chemical Physics,
Chernogolovka, RUSSIA
- P 43 Kinetics of the Direct and Inverse IV-III Phase Transitions in Ammonium Nitrate Crystal Lattice**
G.B. Manelis, N.I. Golovina, D.B. Lempert, G.N. Nechiporenko, G.P. Dolganova, G.G. Nemtsev
Institute of Problems of Chemical Physics,
Chernogolovka, RUSSIA
- P 44 Ammonium Nitrate Cocrystallites as a Way to Eliminate Phase Transitions in Ammonium Nitrate Crystal Lattice**
D.B. Lempert, G.N. Nechiporenko, N.I. Golovina,
G.V. Shilov, G.P. Dolganova, G.G. Nemtsev
Institute of Problems of Chemical Physics,
Chernogolovka, RUSSIA
- P 45 Thermal Stability and Compatibility of Components of AN Base Gas-Forming Compositions for Airbags**
T.K. Goncharov, V.V. Dubikhin, G.M. Nazin,
V.G. Prokudin
Institute of Problems of Chemical Physics,
Chernogolovka, RUSSIA

P 46 3D-Vision Systems for Road Safety Functions

G. Becker, T. Mousel
IEE S.A., Luxembourg, L

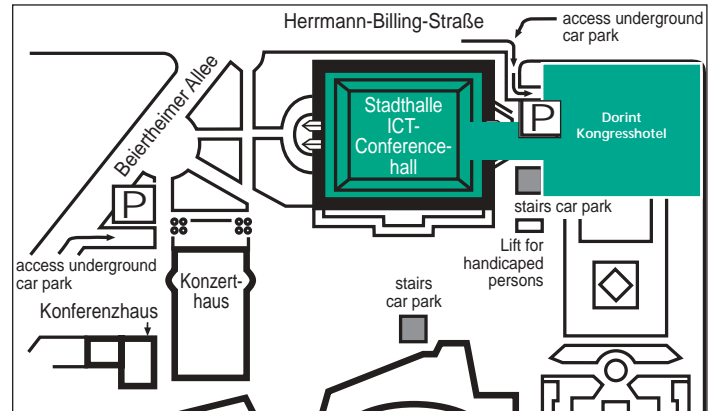
P 47 New Methodology to Characterize Airbag Doors in Automotive Interior

W. Bühler
Faurecia Innenraumsysteme GmbH, Hagenbach, D



Karlsruhe is located some 120 km (80 miles) south of Frankfurt/Frankfurt International Airport just beside the Autobahn A5 and also connected to Frankfurt via Express train »Intercity« or ICE.

*Convenient airports are also:
Strasbourg (F) (approx. 100 km) and Stuttgart (D) (approx. 90 km)*



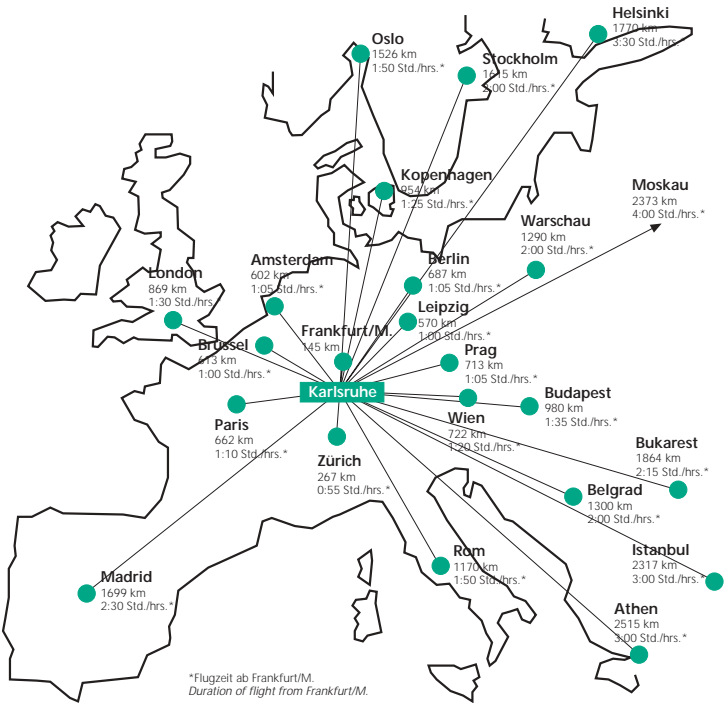
By tram:

from the	Linie / route
• Main station (Hauptbahnhof)	S 1, S 4, S 11, 2
• City center (Stadtmitte)	S 1, S 4, S 11, 2
• »Durlacher Tor«	S 4, 2

By car:

Follow direction signs to the »Kongreßzentrum«

Karlsruhe is located approximately 1 hour south of Frankfurt Airport via Expressway (Autobahn) or Express Train (IC or ICE).



Conference Management

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Federal Republic of Germany

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E-mail: mw@ict.fhg.de
Web site: www.ict.fhg.de
www.airbag2000plus.de

Exhibition Management

Roswitha Tuz (same address as above)
Phone: +49 - (0)7 21 - 46 40 - 4 03
E-mail: tz@ict.fhg.de



Company / Authority / Complete Address Participation (please tick)

- Welcome Reception**
Monday, Nov. 29, 6.00 p. m.
(incl. in the registration fee)
- Visit of Fraunhofer ICT**
Thursday, Dec. 2, 9.30 -12.30 a. m.
(incl. in the registration fee)

Last Name

First name

Title / Position

Registration Fee will be paid upon receipt of the invoice

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Signature

Accommodation

7th International Symposium and Exhibition on Sophisticated Car Occupant Safety Systems
November 29 - December 1, 2004 • Karlsruhe, Germany

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Arrival:

Departure:

Arrival time:

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A	****	Dorint Kongress	136,--	Euro	DBL	177,--	Euro
B	****	Renaissance Hotel	125,--	Euro	DBL	140,--	Euro
C	***	Hotel Queens	107,-- / 116,--	Euro	DBL	131,-- / 141,--	Euro
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E	***	Hotel Santo	91,--	Euro	DBL	109,--	Euro
F	***	Hotel Kaiserhof	95,--	Euro	DBL	125,--	Euro
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I	**	Hotel Eden	75,--	Euro	DBL	100,--	Euro
K	**	Hotel Kübler	76,-- / 92,--	Euro	DBL	95,-- / 129,--	Euro
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