

# ATZ live

## NEW DIESEL, GAS AND DUAL FUEL ENGINES

New engines and turbochargers

## COMBUSTION PROCESSES

Mixture formation, combustion  
and increasing efficiency

## EXHAUST AFTERTREATMENT

Reducing CO<sub>2</sub>, NO<sub>x</sub> and soot

### /// KEYNOTE LECTURE

**Rudolf Ellensohn**

Liebherr Machines Bulle S.A.

### /// FACTORY TOUR

**Liebherr-Werk Ehingen GmbH**



Simultaneous Interpreting  
German and English

# Heavy-Duty, On- and Off-Highway Engines

Global Engineering

11th International MTZ Conference

22 and 23 November 2016 | Ulm | Germany

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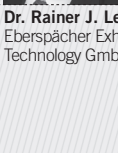
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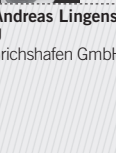
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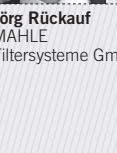
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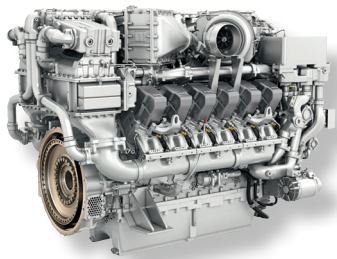
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(Deutschland) GmbH



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## WELCOME

Mobile, stationary and maritime applications all over the world have one thing in common: they need large, powerful and efficient engines. A wide variety of solutions with different fuels and with different injection and exhaust aftertreatment systems are used to meet the requirements of the various sectors. As well as improving existing engines, the engine industry is working closely on developing new, more compact and more efficient solutions with lower emissions for worldwide use.

The annual international MTZ conference “Heavy-Duty, On- and Off-Highway Engines” has in recent years become the key forum where developers and designers of large engines for the on- and off-highway, marine and stationary sectors can share information and experiences. Once again this year we would like to invite all engineers involved in large engine development to take part in the information and discussion forum at this year’s conference on 22 and 23 November 2016 in Ulm.

The central themes of the conference, which is being held for the eleventh time, include new engines and engine components, innovative combustion processes, exhaust aftertreatment, system optimization and new concepts. This successful international event is the ideal platform for finding out in detail about the latest technical developments and taking part in discussions with other experts. The accompanying exhibition and the tour of the Liebherr-Werk Ehingen factory add the finishing touches to the program.

Don’t miss this opportunity to expand your network and make important contacts. The evening event, which takes place in a relaxed atmosphere, is the ideal occasion for doing this. I look forward to meeting you at the conference.

On behalf of the Scientific Advisory Board

Wolfgang Siebenpfeiffer  
Editor-in-Charge ATZ | MTZ | ATZelektronik



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**MTZ** **ATZ** offhighway **MTZ** industrial

## PROGRAM

TUESDAY 22 NOVEMBER 2016

- 8:45 **Welcome and opening of the conference**  
Dr. Alexander Heintzel, Editor-in-Chief ATZ | MTZ Group;  
Dr. Robert Hentschel, Managing Director, Ricardo Deutschland GmbH
- 9:00 **Keynote lecture I Will there still be combustion engines for industry in 20 years?**  
Rudolf Ellensohn, Technical Managing Director Combustion Engines,  
M. Moretti, F. Jaussi, Liebherr Machines Bulle S.A., Switzerland

### NEW ENGINES

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Moderator: Dr. Ioannis Vlaskos, Director – Engines Business Unit,  
Global Market Sector Director – Marine, Ricardo Deutschland GmbH

- 9:30 **The new MAN D2676 marine engine for yachts and workboats**  
Stefan Löser, Divisional Manager for Performance and  
Emissions of Marine and Industrial Engines, Project Manager  
D26 Marine Engine, B. Huneke, M. Zundel, J. Kleesattel,  
MAN Truck & Bus AG
- 10:00 **Development of a new generation of  
GE's type 6 Jenbacher gas engines**  
Jürgen Lang, Lead Engineer Performance Development,  
P. Schäffert, Dr. R. Böwing, S. Rivellini, F. Nota Ph.D.,  
J. Klausner, GE Jenbacher GmbH & Co OG, Austria
- 10:30 Refreshment break with coffee and tea in the exhibition area

### COMBUSTION PROCESSES

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Moderator: Dr. Hans-Otto Herrmann, Director Performance &  
Emissions, Chief Engineer GATS, Daimler AG

- 11:00 **Lean-burn direct injection natural gas engine control for transient applications**  
Panagiotis Katranitsas, Engineer, A. Auld, A. Gurr,  
A. Truscott, Ricardo Innovations, UK
- 11:30 **Prediction of burn rate, knocking and cycle-to-cycle variations of methane/hydrogen mixtures in homogeneous and lean engine operation conditions**  
Sebastian Hann, Research Assistant OD/1D Simulation,  
L. Urban, Dr. M. Grill, Prof. Dr. M. Bargende, FKFS
- 12:00 **Analysis of the influence of different common-rail injector concepts on injection and mixture formation in a high-pressure/high-temperature spray chamber and a single cylinder research engine**  
Martin Drescher, Research and Development Engineer,  
Dr. F. Pinkert, Prof. Dr. B. Buchholz, FVTR GmbH;  
Dr. C. Fink, LKV, University of Rostock

12:30 Lunch in the exhibition area

## EXHAUST AFTERTREATMENT

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Moderator: Rolf Brück, Vice President Catalysts & Filters, Continental Emitec GmbH

- 14:00 **Enabling Stage IIIB engines (< 56 kW) for Stage V with SMF®-AR**  
Dominik Lamotte, Head of Department Systems and Integration, K. Schrewe, T. J. Gornik, HJS Emission Technology GmbH & Co. KG
- 14:30 **PM reduction with vanadium SCR**  
Alexander Feiling, Research Assistant, Prof. Dr. C. Beidl, VKM, TU Darmstadt
- 15:00 **Analysis of field-aged and artificially aged SCR catalysts for model development**  
Dr. Robert Bank, Team Leader EAT, Prof. Dr. B. Buchholz, U. Etzien, FVTR GmbH; Prof. Dr. H. Harndorf, LKV, University of Rostock; Dr. G. Töpfer, A. Troeger, DEUTZ AG
- 15:30 Refreshment break with coffee and tea in the exhibition area

## COMPONENTS

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Moderator: Dr. Michael Krüger, Senior Vice President Diesel Systems, System Engineering, Robert Bosch GmbH

- 16:00 **Applying CAE technology to the medium-speed four-stroke engine development methodology at Niigata**  
Toshiyuki Saito, Manager of Fundamental Technology, Dr. S. Goto, Niigata Power Systems Co.,Ltd, Japan
- 16:30 **New MAHLE steel piston and pin coating system for reduced TCO of CV engines**  
Marco Maurizi, Global Product Expert for Liners and Pins, Dr. D. Hrdina, MAHLE GmbH
- 17:00 **New ABB turbocharger series for large high-speed diesel engines**  
Michael Gisiger, Global Product Line Manager, ABB Inc., USA
- 17:30 **Aspects of the development and application of ported fuel injection valves in large engines**  
Dr. Peter Christiner, Senior Manager Engineering, Robert Bosch AG, Austria

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- 19:30 **Evening of encounters at the Oldtimerfabrik Classic in Neu-Ulm**  
Enjoy a delightful evening and interesting conversations over dinner with colleagues and speakers.

### SYSTEM OPTIMIZATION

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Moderator: Dr. Andreas Lingens, Executive Vice President  
Research & Development Engines, MTU Friedrichshafen GmbH

- 8:30 **Variable valve trains in heavy-duty engines – benefit and design**  
Ulrich Haubold, Project Manager Hardware Development Commercial Vehicles Engine/Gearbox, B. Tilch, Dr. T. Delebinski, IAV GmbH; Thomas Malischewski, Simulation Engineer, S. Hirschmann, A. Sommermann, MAN Truck & Bus AG
- 9:00 **Potential for CO<sub>2</sub> reduction in a heavy-duty diesel engine for on-road applications: experimental investigations**  
Dr. Jonathan Borg, Senior Engineer Pre-Development, Dr. W. Gstrein, Dr. H. Fessler, P. Zimmermann, FPT Motorenforschung AG, Switzerland
- 9:30 **Optimization of oil mist separation within the complete crankcase ventilation system**  
Stefan Ruppel, Head of Development Customer Group in Product Segment Air Intake Module & Cylinder Head Covers Europe, M. Wöhler, D. Schatz, Dr. F. Elsäßer, MAHLE Filtersysteme GmbH
- 10:00 Refreshment break with coffee and tea in the exhibition area

### NEW CONCEPTS

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Moderator: Prof. Dr. Peter Eilts, Director of the Institute of Internal Combustion Engines (ivb), TU Braunschweig

- 10:30 **Catalytic evaporation process for reduced NO<sub>x</sub> and soot emissions in ICEs**  
Robert Szolak, Head of Team Catalytic Evaporation Processes, F. Rümmele, Fraunhofer Institute for Solar Energy Systems (ISE); I. Kraljevic, Fraunhofer Institute for Chemical Technology (ICT)
- 11:00 **Investigation of a 'SCR-free' system to meet the Stage IV and beyond emissions limits**  
Paolo Gatti, Chief Engineer HDD Engine Product Group, S. Fagg, M. Prosicky, Ricardo EU; F. Millo, G. Boccardo, D. Porcu, Politecnico di Torino, Italy; S. Manelli, C. Capiluppi, A. Marinoni, Kohler Engines, Italy
- 11:30 **Exploring the next frontier in efficiency with the opposed-piston engine**  
Dr. Gerhard Regner, Vice President Performance and Emissions, F. Redon, Achates Power, Inc., USA

12:00 **Closing remarks**

Prof. Dr. Peter Eilts, Director of the Institute of Internal Combustion Engines (ivb), TU Braunschweig;  
Dr. Alexander Heintzel, Editor-in-Chief ATZ | MTZ Group

12:05 **Welcome and introduction to the factory tour from Rudolf Ellensohn, Technical Managing Director Combustion Engines, and Josef Schick, Head of Testing, both at Liebherr**

12:15 Lunch in the exhibition area

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13:15 Bus transfer or individual travel to the factory tour

14:00 **Tour of the Liebherr plant in Ehingen.  
The most modern mobile crane factory in the world**

ATZlive and Liebherr-Werk Ehingen GmbH invite you to take part in a factory tour.

Liebherr is one of the leading manufacturers of mobile and crawler cranes. Its selection of all-terrain mobile cranes ranges from a 2-axle 35-tonne model to a heavy-duty crane with a load capacity of 1200 tonnes and a 9-axle chassis.

The company's lattice boom crane on a mobile or crawler chassis can handle loads weighing up to 3000 tonnes. With their telescopic boom systems and extensive range of additional equipment, Liebherr cranes can be found on construction sites all over the world.

You will have the chance to follow the mobile cranes as they make their way through the different stages of the production process in the world's most modern crane factory.



© Liebherr

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approx. **End of the factory tour and bus transfer  
16:30 to Ulm train station or individual departure**



## PARTNER OF THE CONFERENCE IS RICARDO

With more than 2,700 employees, Ricardo is a leading research and development service provider of sustainable mobility and renewable energy with a clear focus on engine, driveline and vehicle development. From our technical centres and offices in Europe (Germany, UK, and the Netherlands), USA and Asia we offer innovative technology and product development as well as delivering prototype manufacture and niche volume production. We have the competence in project management of complex vehicle series development programmes as well as offering highly flexible delivery for specialised individual projects.

In the field of large engines, Ricardo has a wide range of experience from research up to support of series programmes. Ricardo provides low-emission, fuel-efficient and powerful drive unit solutions specifically tailored to markets around the world and has also developed a wide range of solutions for exhaust aftertreatment to meet European, Japanese and US legislation, and also low-cost solutions for emerging markets.

Ricardo delivers concept development, simulation, design work, combustion process development, application and testing. Our test facilities include more than 30 modern industrial engine test beds for heavy-duty and large engines enabling us to develop the next generation of low-emission and fuel-efficient engines for commercial vehicles

for on- and off-highway, marine, rail, clean energy and power generation applications and meet the standards for future emission legislation.

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For information on the various presentation options, please contact:

Elke van Lon

Phone +49 611 7878-320

[elke.vanlon@springer.com](mailto:elke.vanlon@springer.com)



[www.ricardo.com](http://www.ricardo.com)



## PARTICIPANTS

The MTZ Conference “Heavy-Duty, On- and Off-Highway Engines” is aimed worldwide at experts from engine and vehicle manufacturers in the fields of commercial vehicles, off-highway and marine applications, stationary engines, suppliers and development partners, teaching staff and research assistants from universities, representatives of authorities and associations and engineers active in these fields.

## ABOUT THE CONFERENCE

Improving efficiency while simultaneously reducing air pollutant emissions and fuel consumption remain important objectives in the process of developing new engines. This calls, on the one hand, for innovative concepts and solutions and, on the other, for a thorough analysis of the interaction between existing individual systems and components. The main themes of the conference include new engines and components for commercial vehicles and for off-highway, marine and stationary applications, pollution reduction, fuel injection and solutions for optimizing engines and other systems. The conference will highlight current and future developments in the field of heavy-duty diesel and gas engines for a wide range of uses. It is an unmissable opportunity for specialists in large engines from all over the world to share information and experiences.

Both days of the conference will offer simultaneous German/English and, if required, English/German interpreting. Please find the German version of the program at [www.ATZlive.de](http://www.ATZlive.de) or order a copy by telephone on +49 611 7878-132.

## DIGITAL, INTERNATIONAL AND INTERACTIVE: THE NEW eMAGAZINES



## ATZ WORLDWIDE

As a participant in this conference you have the opportunity to read our new English-language eMagazines free of charge and without obligation. We offer you 30 days of free access.

## MTZ WORLDWIDE

When registering, please specify which eMagazine you would like to read.



## REGISTRATION FEE

€ 1,395.– plus VAT

This includes the conference documentation, coffee breaks, soft drinks, two lunches and the evening reception.

## VENUE

Maritim Hotel Ulm  
“Einsteinsaal”  
Basteistraße 40  
89073 Ulm | Germany

## HOTELS

The following hotels have room blocks at reduced prices for the participants. **Please make your reservation by 7 October 2016 (Maritim Hotel Ulm) or by 21 October 2016 (Golden Tulip Parkhotel Neu-Ulm and RiKu HOTEL Neu-Ulm) quoting the reference “Heavy Duty”.**

### **Maritim Hotel Ulm**

Basteistraße 40  
89073 Ulm | Germany  
Phone +49 731 923-1791 | Fax +49 731 923-1000  
info.ulm@maritim.de | www.maritim.de  
€ 128.– Single room, includes breakfast

### **Golden Tulip Parkhotel Neu-Ulm**

Silcherstraße 40  
89231 Neu-Ulm | Germany  
Phone +49 731 8011-0 | Fax +49 731 85967  
info@goldentulip-parkhotel-neu-ulm.com  
www.goldentulip-parkhotel-neu-ulm.com  
€ 118.– Single room, includes breakfast

### **RiKu HOTEL Neu-Ulm**

Maximilianstraße 4  
89231 Neu-Ulm | Germany  
Phone +49 731 980 941-50 | Fax + 49 731 980 941-51  
neu-ulm@riku-hotel.de | www.riku-hotel.de  
€ 79.50 Single room, includes breakfast

## LANGUAGES USED IN THE PRESENTATIONS

German and English with simultaneous interpreting  
(German – English / English – German)

## CONDITIONS

No cancellation charge is due if registration is canceled by 24 October 2016. Cancellations made after that date will incur a charge of 35 % of the registration fee. For cancellations made after 31 October 2016 the full registration fee is payable. Cancellations must be made in writing. The date of the postmark will determine whether the deadline has been met. If you are unable to attend, we will be happy to accept a substitute participant.

Should a speaker be unable to attend at short notice by reason of force majeure, illness, accident or other circumstances for which ATZlive cannot be held responsible, another qualified person will be appointed to the exclusion of any claim for compensation. Should the event be canceled altogether, we will of course refund the registration fee.

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# ATZ live

**ATZlive**

**// Spotlight on Powertrain and Vehicle Engineering //**

ATZlive organizes its high-caliber conferences for vehicle and engine specialists together with key representatives from research and industry to ensure that they are tailor-made to the needs of the participants and address the very latest issues. Our close collaboration with the editorial teams of our specialist magazines ATZ and MTZ keeps us fully up-to-date on the latest topics and trends on the market.

ATZlive is part of the world's second largest scientific publishing group, Springer Science + Business Media.

# CONFERENCE REGISTRATION

## Heavy-Duty, On- and Off-Highway Engines

22 and 23 November 2016 | Ulm | Germany

In accordance with the General Terms and Conditions and the price list, I would like to order the following:\*

Participation in the conference at a price of € 1,395.– plus VAT

\* The General Terms and Conditions of ATZlive apply, as published on the website [www.ATZlive.de/AGB](http://www.ATZlive.de/AGB)

I would like to take part in the factory tour of Liebherr-Werk Ehingen GmbH on 23 November 2016 after the conference.

I would like to make use of the bus shuttle (from Ulm to the Ehingen plant, returning from the Ehingen plant to Ulm train station).

I will make my own travel arrangements to and from Ehingen.

### Registration data

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Family name

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First name

Acad. title

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Company / Institute

---

Department

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Function

---

Street / P.O. box

---

Postal code / City

Country

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Phone

Fax

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E-mail address of the participant

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Invoice address (if different from above address)

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VAT No.

CS000988

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