



MIC

Machining Innovations Conference
for Aerospace Industry

AGENDA



New Production Technologies in the Aerospace Industry

February 5th and 6th 2025 at the Hannover Centre
for Production Technology PZH (Garbsen, Germany)



Dear Ladies and Gentlemen!

The “Machining Innovations Conference for Aerospace Industry” is set to return to the Hanover Centre for Production Technology, embodying the enduring spirit of innovation. We warmly invite you to join us for engaging discussions and presentations that explore cutting-edge approaches within the aerospace sector. In the face of ongoing geopolitical tensions and evolving global challenges, the aerospace industry continues to demonstrate remarkable resilience and adaptability. It is now shifting its focus toward a future shaped by groundbreaking technologies. These innovations are pivotal in driving the adoption of sustainable manufacturing practices, addressing the impacts of climate change, and accelerating the transition to a circular economy.

At the same time, the strategic integration of digitalization is unlocking new opportunities for value creation in production processes. This development emphasizes the necessity for continuous dialogue and collaboration to effectively tackle the multifaceted challenges and opportunities ahead. It also reinforces the industry’s role in contributing to global sustainability and economic vitality.

Since its establishment in 2001, the annual “Machining Innovations Conference for Aerospace Industry,” hosted by the Institute of Production Engineering and Machine Tools (IFW) and the Manufacturing Innovations Network e.V. (MIN), has acted as a driving force for innovation. The conference continues to expand the horizons of manufacturing through vital industry exchanges and collaborative efforts.

The conference brings together international experts and researchers to foster dialogue and exchange ideas on advancements in manufacturing technology. On behalf of the Organizing Committee, we welcome you to the 24th Machining Innovations Conference for Aerospace Industry (MIC2025) on February 5th and 6th. Leading experts from industry and research will showcase cutting-edge trends, advanced knowledge, and recent research outcomes in the aerospace sector. The conference program will also feature a guided tour of the IFW laboratory. Additionally, young researchers will share their latest discoveries during a poster session, while companies will present their newest innovations for the manufacturing industry in the exhibition area.

The scientific speeches and publications are sponsored by the International Academy for Production Engineering (CIRP). All contributions to the scientific session were single-blind peer-reviewed and published in MIC Proceedings, accessible via SSRN (<https://www.ssrn.com/>).



Harald Schmitz

Prof. Dr.-Ing.
Berend Denkena

We proudly present the agenda for this year's conference. For further information, please visit our website:
www.mic-conference.com

We look forward to welcoming you to the 24th MIC!

Yours sincerely,

**Harald Schmitz**

Head of the Board of the
Manufacturing Innovations Network e.V.,
Senior Manager Premium AEROTEC
at the Varel plant

**Prof. Dr.-Ing. Berend Denkena**

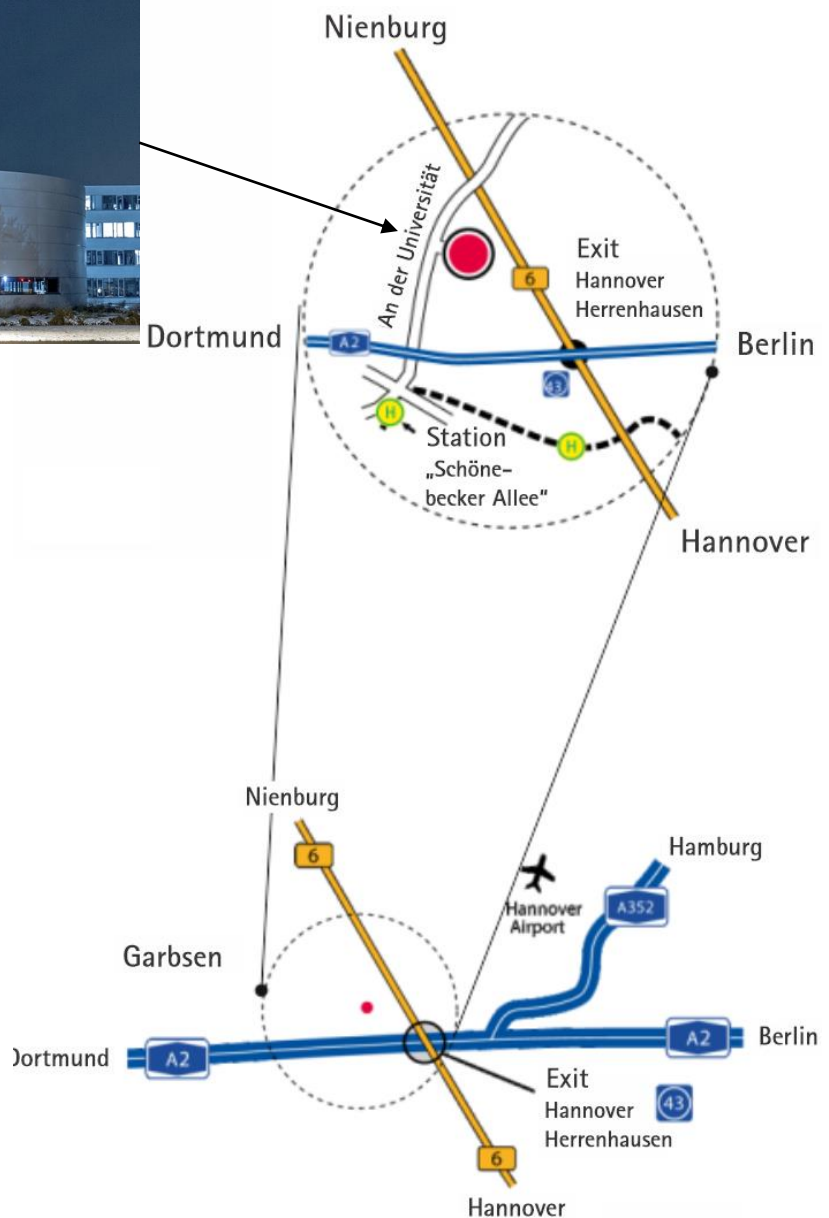
Member of the Board of the
Manufacturing Innovations Network e.V.,
Head of the Institute of Production
Engineering and Machine Tools, Leibniz Uni-
versität Hannover



Hannover Centre for Production Technology (PZH)

of the
Leibniz Universität Hannover
An der Universität 2
30823 Garbsen

www.pzh.uni-hannover.de



Arrival

Car:

Leave the freeway A2 at exit "Herrenhausen", then follow the federal road B6 in the direction of Nienburg. Turn left onto the street "An der Universität". Take the third exit of the traffic circle and use the parking area to your left.

Public transportation:

Hannover Central Station → Kröpcke (8 min by foot or by tram lines 1, 2, 3, 7, 8, or 9) → change to Line 4 in the direction of Garbsen and get off at Schönebecker Allee → take the shuttlebus 404. You will need a ticket for this trip that includes the ticket zones A and B. The price will be about 4,50 € for a one-way ticket.

Plane:

Hannover Airport or any other airport → use the public transportation to get to Hannover's Central Station → follow the instructions under public transportation.

Host

This conference is hosted by the Manufacturing Innovations Network e.V. in cooperation with the Institute of Production Engineering and Machine Tools of the Leibniz University Hannover, Germany.

Harald Schmitz

Head of the Board of the
Manufacturing Innovations Network e.V.,
Senior Manager Premium AEROTEC
at the Varel plant

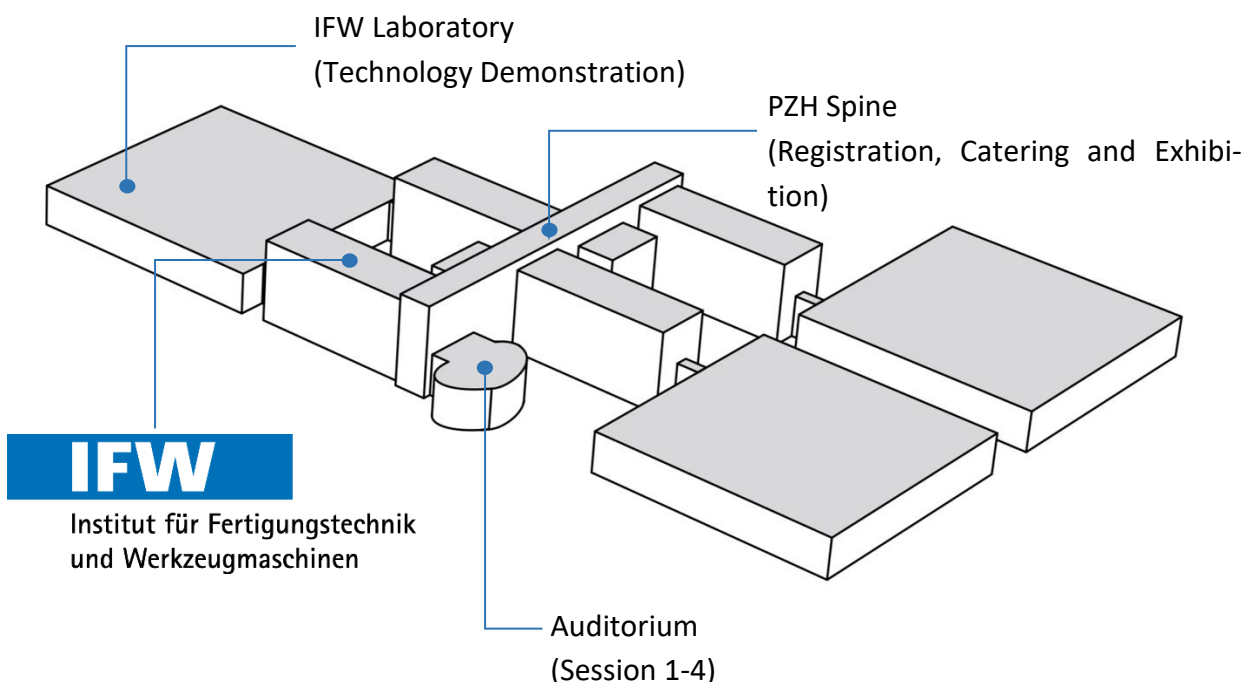
Prof. Dr.-Ing. Berend Denkena

Board Member of the
Manufacturing Innovations Network e.V. and
Head of Institute of Production Engineering
and Machine Tools of the Leibniz Universität

Conference Structure

| 5th February 2025 | 6th February 2025 |
|---|---|
| Keynotes | Keynotes |
| Session 1: Speeches of Industry & Science | Session 3: Speeches of Industry & Science |
| Lunch Break & Technology Demonstration | Lunch Break |
| Session 2: Speeches of Industry & Science | Session 4: Speeches of Industry & Science |
| Evening Gala | End of Conference |

Overview of the PZH



Welcome Speech (Auditorium)

09:00 a.m. **Introduction Speech for the Machining Innovations Conference 2025**
Prof. Dr.-Ing. Berend Denkena, Leibniz University Hannover

Keynote Speech

09:15 a.m. **Hard Crash or Soft Landing? Challenges and Success Factors of Industrialization**
Dr. Silke Maurer, Chief Operating Officer, MTU Aero Engines AG

Keynote Speech

09:45 a.m. **Securing Production Performance through Digital Collaboration**
Jacek Kruszynski, Chief Technology Officer, MAPAL Group

10:15 a.m. **Introduction of the Exhibitors**

10:30 a.m. **Exhibition & Coffee Break**

11:00 a.m. **Leveraging Digital Twins for the Manufacturing of Safety-Critical Aerospace Parts**
Vincent Gerretz, Co-Founder & Managing Director, gemineers GmbH

11:30 a.m. **Rapid Plasma Deposition[®] Replacement of Legacy Forgings and Castings**
Odd Terje Lium, Vice President of Engineering & ETC Site Leader, Norsk Titanium AS

12:00 p.m. **Advancing Sustainable Manufacturing: Innovations in Cutting Fluid Performance Testing**
Jack Secker, Technical Lead, Cutting Fluid, AMRC

12:30 p.m. **Lunch Break & Technology Demonstration**

02:30 p.m. **Stairway to Sustainability – Measurement and Control Solutions to Reduce the CO2 Footprint per Part**
Dr. Jens Kummetz, Head of Technical Training, DR. JOHANNES HEIDENHAIN GmbH

03:00 p.m. **Paper Presentation**

03:30 p.m. **Exhibition & Coffee Break**

04:00 p.m. **Directed Energy Deposition (DED) - The Largest Additive Production Part in Commercial Aviation, Machined in Varel**
Dr. Jan Roman Hönnige, Industrialisation Manager & Product Owner DED, Premium AEROTEC

04:30 p.m. **Simulating Cutting Tools and Processes – Advances and Future Applications**
Dr. Arne Mücke, Founder & Managing Director, Tetralytix

05:00 p.m. **End of First Conference Day**

07:30 p.m. **Evening Gala**
Sheraton Pelikan Hotel Hannover

Welcome Speech (Auditorium)

09:00 a.m. **Introduction Speech for the Machining Innovations Conference 2025**
Harald Schmitz, Chairman of the Board, Manufacturing Innovations Network e.V.

Keynote Speech

09:15 a.m. **Advanced Manufacturing Technologies for Future ZEROe Aircraft**
Dr. André Walter, Chairman of Management Board, Airbus Aerostructures GmbH

Keynote Speech

09:45 a.m. **Artificial Intelligence vs. Human Understanding of Physics: How can the Skill Gap in Manufacturing be Solved?**
Dr. Yavuz Murtezaoglu, Managing Director, ModuleWorks

10:15 a.m. **Exhibition & Coffee Break**

11:00 a.m. **The Pursue for Operational Efficiency: A Long-Term Airline Vision**
Dr. Asteris Apostolidis, Senior Lead, Technical Innovations & Emerging Technologies, KLM Royal Dutch Airlines

11:30 a.m. **Leveraging Manufacturing Engineering in Production**
Charles Tivey, Founder and Manager, Aerospace Validation Center, Siemens AG

12:00 p.m. **Paper Presentation**

12:30 p.m. **Lunch Break and Poster Session**

Keynote Speech

02:00 p.m. **AFSD Hybrid Manufacturing: Deposition and Machining Strategies**
Prof. Tony Schmitz, Mechanical, Aerospace and Biomedical Engineering, University of Tennessee

02:30 p.m. **Advanced Manufacturing Technologies for Structural Components**
Armin Walther, CEO, bavius technologie gmbh

03:00 p.m. **Machinability Framework for Digital Cutting Tool and Process Design in Aerospace Manufacturing**
Trent Woodcock, Account Manager, Third Waves Systems/Solid Flow

03:30 p.m. **From Chaos to Control: Harnessing Decision Intelligence for Smarter Production**
Siebo Stamm, Co-Founder, AQonvis GmbH

04:00 p.m. **Farewell Speech (Auditorium)**
Prof. Dr.-Ing. Berend Denkena, Leibniz University Hannover

04:15 p.m. **End of the Conference**

45 min Guided Tours in the IFW Laboratory | Feb 5th 12:30 p.m.

Find out more about the research projects of the IFW. During guided tours through our laboratory, we show various projects featuring live demonstrations. This year's topics revolve around Sustainability and Digitalization.

Towards Automatization - AI Chip Detection



L. Hartung

Maintaining Tolerances:
Deformation control for thin-walled workpieces



E. Wnendt

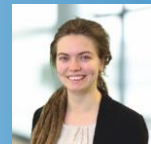
SmartRoughing



Fusion of Machine & Force Data:
Single Cutting Edge Analysis



Process Parallel Quality Control:
A Digital Twin Implementation in Milling Operations



J. Huuk



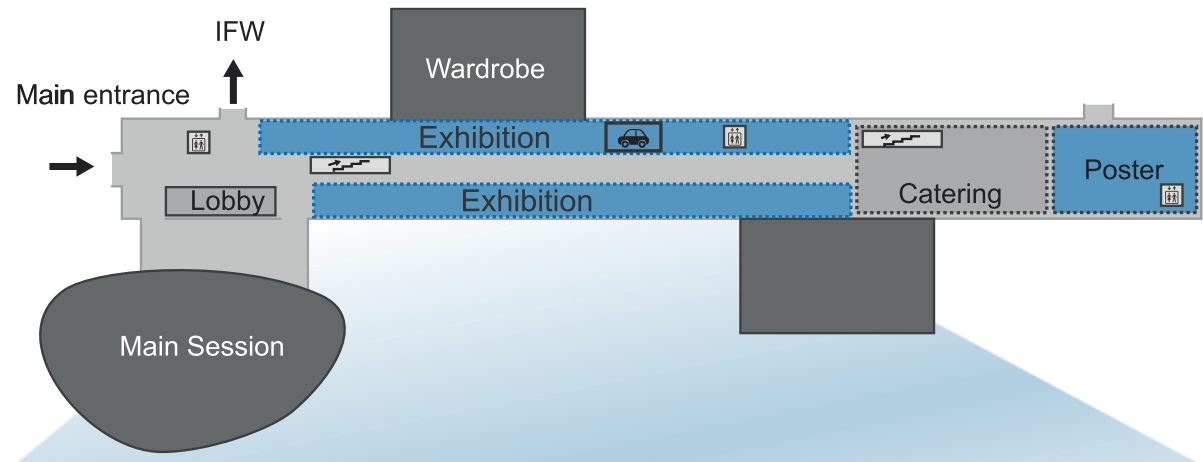
Exhibition

The exhibition at the MIC offers an opportunity to get in touch with companies from the industry. The exhibition area can be visited between lectures. Below are the companies that will be present as exhibitors at MIC2025.

This Year's Exhibitors



Exhibition Area



Scientific Topics | Feb 5th 03:00 p.m. and 6th at 12:30 p.m.

Dimensional Error Shaping and Diminishing in Peripheral Milling of Thin-Walled Structures by End Mills with Progressive Helix Angle

Lasse Evers, Tobias Ruhsam, Michel K. Seiffert, Jan H. Dege

Institute of Production Management und Technologie (IPMT), Hamburg University of Technology (TUHH) & Ceratizit Balzheim GmbH & Co. KG

Development of an Innovative Drilling Process for Machining Titanium/CFRP Stack Materials

Felix Hartmann, Jens Schneider, Peter Hedrich

Fraunhofer IPA (Institute for Manufacturing Engineering and Automation) & Stiefelmayer Spanntechnik GmbH & Co. KG & Kempf GmbH

Use of a Referencing System for the Automation of a Riveting Process in the Aircraft Fuselage

Nils Heidemann, Jacques Biltgen, Felix Holleitner, Eugen Gorr, Jörg Jendry, Konstantin von Haugwitz, Jan Sender

Fraunhofer IGP (Institute for Large Structures in Production Engineering) & Airbus Operations GmbH & University of Rostock

Mechanistic Turning Force Modeling for Corner and Edge Radiused Inserts

Raja Kountanya, Santhosh Ranganath, Changsheng Guo

Pratt & Whitney & RTX Technology Research Center

Analysis of Abrasive Wear on Precision Tools Using Artificial Intelligence Methods

Niklas Lohmar, Benedikt Thimm

Transfer Centre for Intelligent Production Systems, Rheinische University of Applied Sciences Cologne

Fast Part Geometry Estimation for 3-Axis Milling

Yiğit Özcan, Shashwat Kushwaha, Jun Qian, Dominiek Reynaerts

Department of Mechanical Engineering, KU Leuven

Residual Stresses Induced by Solid Reaming in Holes on a Martensitic Helicopter Shaft

T. Leveille, J. Rech, F. Valiorgue, M. Dumas, U. Masciantonio, H. Karaouni

Ecole Centrale de Lyon & Airbus Helicopters & Cetim & Framatome & SAFRAN Tech & MISUTECH

Multi Sample-Rate Force Monitoring in Milling Based on Current and Voltage Measurement

Adrian K. Rüppel, Youssef Telha, Markus Meurer, Thomas Bergs

Manufacturing Technology Institute (MTI), RWTH Aachen University & Fraunhofer IPT (Institute for Production Technology)

Influence of Broaching Oil Properties on the Tool Wear During Roughing Processes

Christoph Zachert, Markus Meurer, Thomas Bergs

Manufacturing Technology Institute (MTI), RWTH Aachen University & Fraunhofer IPT (Institute for Production Technology)

Strategies to Implement Feature Specific Processing Parameters in PBF-LB of Ti-6Al-4V

Johanna Steiner-Stark, Felix Zell, Kevin Gutzeit, Benjamin Kirsch, Jan C. Aurich

Institute for Manufacturing Technology and Production Systems, RPTU Kaiserslautern

Distortion Prediction of Large Parts by a Sensoric Clamping System

Berend Denkena, Henning Buhl, Heiko Blech

Institute of Production Engineering and Machine Tools (IFW), Leibniz University Hannover



The Mozart Hall at the Sheraton Hannover Pelikan Hotel offers an exceptional setting for an unforgettable Evening Gala. Located in the trendy Pelikan District, this modern design hotel stands on the historic grounds of the former Pelikan fountain pen factory. Lovingly and meticulously restored, the venue seamlessly blends historic charm with contemporary elegance, providing the perfect backdrop for a sophisticated and memorable event. We hope that you enjoy the selected menu. Shuttles will bring you to the evening gala and then back to your accommodation.

Program Overview | Feb 5th

| | |
|------------|-----------------------------|
| 07:30 p.m. | Opening of the Evening Gala |
| 08:00 p.m. | Words of Professor Denkena |
| 08:30 p.m. | Dinner |
| 09:30 p.m. | Social Hour |

Address

Pelikanplatz 31
30177 Hannover



For your stay in Hanover, we have selected hotel near the conference venue or the gala location. Please contact all hotels directly for bookings. It is not possible to book via the keyword "MIC2025". The accommodation option are listed below:

Sheraton Pelikan Hotel****

Pelikanplatz 31
30177 Hannover
Phone: +49 511 90930
info.sheratonhannover@arabella.com



Hotel Landhaus am See****

Seeweg 27-29
30827 Garbsen
Phone: +49 5131 4686-0
info@landhausamsee.de



Novotel Suites Hannover City***

Rundestraße 9
30161 Hannover
Phone: +49 511 374500
h3755@accor.com



Globotel Business***

Porschestraße 8
30827 Garbsen
Phone: +49 5131 4920
reservierung@globotel.de



Hotel-Restaurant Bullerdieck****

Bürgermeister-Wehrann-Straße 21
30826 Garbsen-Frielingen
Phone: +49 5131 458-0
info@bullerdieck.de



Ibis Budget*

Rundestraße 7
30161 Hannover
Phone: +49 511 2355570
h3518@accor.com



Feb. 5th:

Departure Location

Bus 1:

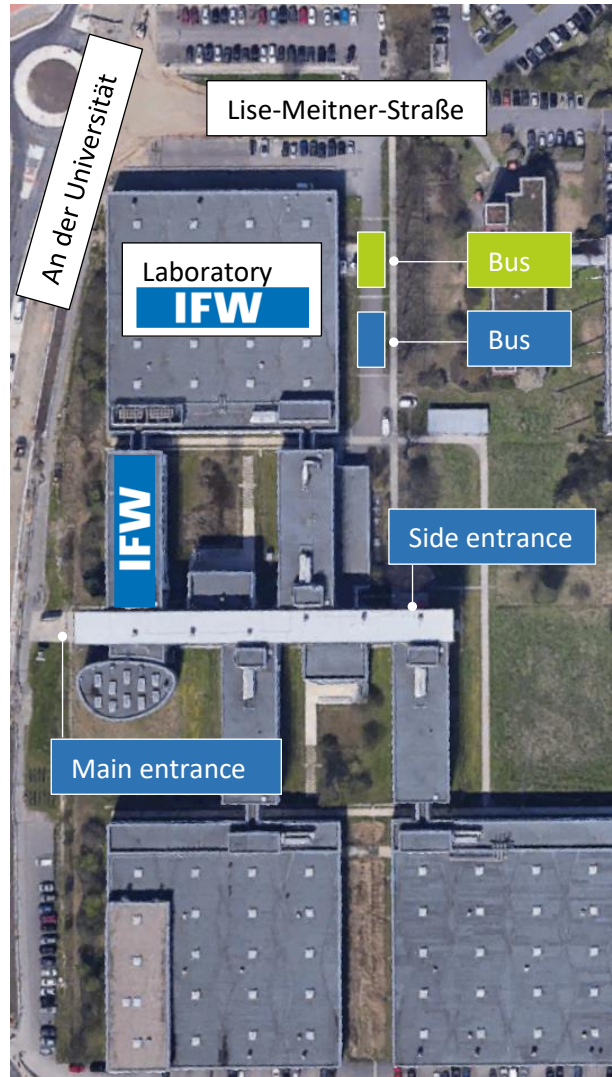
- 5:30 p.m. PZH Garbsen
- 5:35 p.m. Globotel Business
- 5:40 p.m. Hotel Landhaus am See
- 5:55 p.m. Hotel Bullerdiek

- 6:40 p.m. Hotel Bullerdiek
- 6:50 p.m. Hotel Landhaus am See
- 6:55 p.m. Globotel Business
- 7:30 p.m. Arrival at Pelikan Hotel

Bus 2:

- 5:30 p.m. PZH Garbsen
- 5:40 p.m. Mercure Hotel
- 6:00 p.m. Ibis Budget
- 6:00 p.m. Novotel City
- 6:15 p.m. Pelikan Hotel

- 6:50 p.m. Mercure Hotel
- 7:10 p.m. Ibis Budget
- 7:10 p.m. Novotel City
- 7:30 p.m. Arrival at Pelikan Hotel



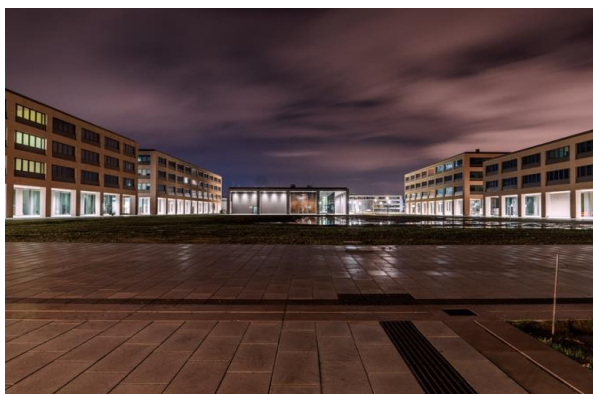
Departure Location

Bus 1:

- 10:30 p.m. Pelikan Hotel
- All the offered Hotels

Bus 2:

- 11:15 p.m. Pelikan Hotel
- All the offered Hotels



Taxi

Bittner Taxengemeinschaft (Garbsen): +49 5131 2222
Hallo Taxi 3811 (Hanover): +49 511 3811
Taxi-Hannover-Airport (Hanover Airport): +49 163 294 1975

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Wi-Fi

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Website and Social Media

For further information, please visit the
website:

(<https://www.mic-conference.com/>)



For further pictures and information, visit our Instagram account:





MIC

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for Aerospace Industry

We look forward to welcoming you at the
PZH in Garbsen!