

NOISE

Optimisation EV/HEV

21–23 February 2017 | Maritim Konferenz Hotel Darmstadt, Germany

3 FULL DAYS + 12 SPEAKERS + 3 WORKSHOPS UNLIMITED NETWORKING OPPORTUNITIES

Attending companies:



DAIMLER



With contributions from the following experts:



Chairman:
Johan Stenson,
Change Manager R&D,
HR R&D,
Volvo Car Corporation,
Sweden



Peter Borne,
Team Leader NVH,
Vehicle Physics,
Volkswagen Osnabrück GmbH, Germany



Florian Fink,
PhD Candidate,
RD/FNV Structural Dynamics,
Daimler AG, Germany



Ben Butler,
Principal Engineer – NVH,
Vehicle Refinement,
Ricardo plc, UK



Luca Brondolo
Principal Engineer,
Aeroacoustic APC NVH,
Jaguar Land Rover, UK



Dr. Torsten Treyde,
Deputy Director Engineering
Technology,
Global Simulation & NVH,
ZF TRW, Germany



Michael Haverkamp,
Specialist Cross-Sensory
Harmonization,
Product Development,
Ford Werke GmbH, Germany



George Winney
Principal Engineer NVH,
VICAM - NVH,
**Tata Motors European
Technical Centre,** UK



Dr. Thomas Engels,
Technical Director Structural PU
Systems, **Henkel AG & CoKGaA,**
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Jonathan Millitzer,
Team Leader Active Control,
Department of Reliability and
System Integration,
**Division Smart Structures
Fraunhofer Institute for
Structural Durability
and System Reliability LBF,**
Germany



Scott Amman
Technical Expert Signal
Processing and Advanced
Voice Recognition Group,
Research and Innovation
Center,
Ford Motor Company, USA

Dear Colleague,

As Chairman, it is my honour and great pleasure to welcome you all to the **Noise Optimisation EV/HEV Conference 2017**. I am very excited about the interesting subjects and inspiring context, **combining lectures with hands-on visits, workshops and reflections**.

I left the NVH area in 2013, at a time when electrification was starting to take huge steps within the automotive business. After 15 years within different leadership roles at NVH, I challenged myself to take on a coaching and leadership development career, in order to give a bit of my leadership experience.

So this conference is a really exciting opportunity for me to combine my past and present. It gives me a chance to listen to your **challenges and findings in the NVH field**, and allows me to give you a flavour of my reflections about leading development of highly complex products within a complex organisation.

I wish you all lots of learning and great experiences at the conference – see you there!

Best Regards,



Chairman:

Johan Stenson,
Change Manager R&D,
HR R&D, **Volvo Car Corporation**,
Sweden

Why you should attend?

1. Learn innovative approaches to meet the **challenges for EV and HEV** that NVH engineers are currently facing
2. Get an all around approach to **latest evolution of pass by noise legislation** and the adaptive achievements made recently
3. Discover **state of the art** strategies for **measuring and assessing NVH** data in order to improve and align your data quality
4. Understand the **requirements for enhanced sound design** and ensure a **unique acoustic driving experience** for customer delight
5. Enhance your noise, vibration and harshness **engineering** by **seamless integration** of vehicle and powertrain refinement in the **entire value chain**

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08:30 Registration and welcome coffee



Who is Who Wall - Discover who else is participating in the conference. The matchmaking picture wall will help you identify who you want to meet at the conference. In cooperation with **FUJIFILM**

09:10 Chairman's opening

Future of NVH in hybrid and electric vehicles

09:20 **In-cabin sound quality enhancement in electric vehicles, an augmented approach**

- Achieving EV sounds of integrity & authenticity: the industry's challenge
- Enhancing driver experience in EV's
- Developing a tuneable system to meet different brand requirements



Ben Butler,
Principal Engineer – NVH,
Ricardo plc, UK

10:00 **Speed networking** - Get in touch with the other conference guests in quick paced 1-to-1 meetings – make sure you bring a stack of business cards.



10:30 Refreshment break and networking

11:00 **How to use simulation in order to manage future NVH challenges in e-mobility**

- Definition of NVH requirements
- How to reduce friction induces noise
- Decrease transient gear train induced noise



Dr. Torsten Treyde,
Deputy Director Engineering Technology,
ZFTRW, Germany

11:40 **Electric Vehicle NVH at Tata Motors European Technical Centre**

- History of development of electric vehicles in Tata Motors European Technical Centre
- Economical solutions for EVs, Hybrids and range extenders
- Sound quality concerns
- Adding sounds to improve driving experience



George Winney,
Principal Engineer NVH,
Tata Motors European Technical Centre, UK

12:20 Networking luncheon

13:50 **The future is now: Execution for new electric vehicles**

- NVH EVs versus traditional vehicles
- Electric vehicles advantages and trade-offs
- Today EV requirements

Speaker to be confirmed soon

Use of materials for different NVH applications

14:30 **NVH solutions in automotive**

- Overview of NVH solutions
- NVH solutions for automotive



Dr. Thomas Engels,
Technical Director Structural PU Systems,
Henkel AG & CoKGaA, Germany

NVH active control solutions

15:10 **Active control systems with electro active polymers**

- EAP Model building
- Bearing model building
- Electromechanical model
- Control prototyping



Florian Fink,
PhD Candidate,
Daimler AG, Germany

15:50 Short refreshment break and departure to Fraunhofer LBF

Hands on site visit:

16:30 **While visiting the Fraunhofer LBF laboratory listen to the interactive talk on: Active Control Systems for the reduction of noise and vibration in vehicles**

- Overview on active measures
- Actuators for active control
- Experimental studies on different actuator-sensor configurations for active noise and active vibration control
- NVH related test benches at the Fraunhofer LBF



By Jonathan Millitzer,
Team Leader Active Control,
Fraunhofer LBF, Germany

At the end don't miss the opportunity to get inside and experience the ANC and AVC demonstration vehicle of the Fraunhofer LBF

18:10 Departure from Fraunhofer LBF to evening get-together



Evening Event – Join us for an informal evening get-together! This is an excellent opportunity for you to meet the other attendees and make new business contacts. Relax and round off your first conference day in an informal atmosphere.



09:00 Chairman's opening

Out of the box breakfast presentation

09:10 Start the day with a new experience that can lead to stimulating discussions and significant learnings:

Leading development of highly complex products within a complex organization

- What makes a great leader within the NVH area?
- People leader or technical expert – Is there a “best” combination?
- Sharing experience and reflections around challenges in leadership in a complex environment



By Johan Stenson,
Change Manager R&D,
Volvo Car Corporation, Sweden

Regulation on noise, the legislation on vehicle emissions and its impact

10:00 **Pass by noise regulation and tire development**

- Overview of new noise limits applied as from July 2016 and the impact on EV/HEVs
 - Minimizing tire noise sources
 - Requirements for stricter tire performance
- Speaker to be confirmed soon*

10:40 **Author's presentation:**

Synesthetic Design: A Handbook for a Multi-Sensory Approach by Dr. Michael Haverkamp
Synesthetic design strives to develop products that systematically incorporate all five senses. This book is helpful for all kinds of applications which incorporate various senses. Special attention is directed to the field of sound design and optimization of product sounds within multi-sensory environments.



Sound design and engineering

10:55 **The impact of vehicle noise on speech recognition and hands-free call systems**

- Factors affecting speech systems in the car
- Measuring the performance impact of road and HVAC noise
- Relating speech recognition performance to NVH metrics and targets
- The future of speech recognition and hands-free call quality systems



Scott Amman,
Technical Expert Signal Processing and Advanced Voice Recognition Group, **Ford Motor Company**, USA

11:35 **Contribution of touch/material sounds to perceived quality of the vehicle interior**

- Contribution of touch sounds to multi-sensory quality of the vehicle interior
- Sound measurement and perceptual testing
- Evaluation of knocking sounds
- Assessment of cross-sensory effects of sound



Michael Haverkamp,
Specialist Cross-Sensory Harmonization,
Ford Werke GmbH, Germany

12:15 Networking luncheon

13:45 **Side mirror aeroacoustic optimization**

- Aeroacoustic optimization of side mirror
- Seven design parameters
- Conclusions and learnings



Luca Brondolo
Principal Engineer,
Jaguar Land Rover, United Kingdom

14:25 **Round Table: Customer NVH experience** Delegates will be sorted into two groups to facilitate a healthy and engaged discussion in a smaller group. After half an hour the delegates will swap round table and topic giving you the chance to participate in all discussions. Collect main points and present to the audience.

Table 1: How to achieve cooperation between different departments to ensure a full NVH experience is delivered to the customer



Moderator: Michael Haverkamp,
Specialist Cross-Sensory Harmonization,
Ford Werke GmbH, Germany

Table 2: Comparing procedures regarding customer requirements between departments



Moderator: Johan Stenson,
Change Manager R&D,
Volvo Car Corporation, Sweden

15:00 Refreshment break and networking

Tutorial: Noise requirements (OEMs and Tier1s collaboration)

15:30 **Today still often NVH requirements are not very specific. Terms like e.g. “no unpleasant noise” are sometimes the whole specification. Having a more specific characterization of the customer target would increase efficiency in development.**

- Analyse the requirements for noise specification from OEMs
- Creating a methodology, which can help to come to more specific and efficient NVH targets



Dr. Torsten Treyde,
Deputy Director Engineering Technology,
ZF TRW, Germany

17:30 Closing remarks of the chairman and end of conference

"You can succeed on your own terms but you can't succeed alone"

Join our **interactive workshops** and benefit from **in-depth sessions**, hosted by selected **industry experts**. Our industry **experts** will share their expertise with a **limited group of peers**. Our workshop leaders will actively **foster open exchange** and discussion to help you **tackle challenges**, **discover solutions**, and **make decisions** crucial to **operational excellence**.

08:00 Registration and welcome coffee

08:30-10:30 Workshop A

Active noise control in HEV vehicles

Case study of **active road noise control** in **lightweight HEV vehicle** (VW XL1) as **"kick-off"-contribution for exchange** of different tasks & solutions in similar applications. The focus of this workshop will be on overcoming this industry challenge.

- Technical motivation and solution of ARNC in XL1-vehicle
- Feedback & discussion of this approach with workshop participants
- Input of other cases from participants



By Peter Borne,
Team Leader NVH,
Volkswagen Osnabrück GmbH, Germany

10:30 Refreshment break and networking

11:00 – 13:00 Workshop B

Leading development of highly complex products within a complex organisation

This workshop session aims to give the attendees an opportunity to discuss and share experience regarding challenges and necessary skills for **successful leadership** in a **technically complex environment**. Join us and learn more about it.

- Contribute and share your experiences around the balance between technical knowledge and leadership skills
- NVH considerations and applications



By Johan Stenson,
Change Manager R&D,
Volvo Car Corporation, Sweden

13:00 – 14:00 Networking luncheon

14:00 – 16:00 Workshop C

Interior noise in electric cars: noise minimization and comfort

This workshop's primary goal is to discuss and find solutions for **minimizing interior noise** without compromising **comfort**.

This workshop will explore the opportunity to brainstorm with other leading NVH experts and build new foundations for possible results.

- EV Sounds, from concept to design
- Sound branding & requirements

Workshop leader to be announced

16:00 End of workshop day



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Conference Packages	Book and pay by 18 November 2017	Book and pay by 16 December 2017	Book and pay by 27 January 2017	Standard Price
<input type="checkbox"/> Bronze Package 2 Conference Days	Save € 850,- € 2.049,- +VAT	Save € 650,- € 2.249,- +VAT	Save € 250,- € 2.649,- +VAT	€ 2.899,- + VAT
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The delegate fee includes the following services:

- Access to the purchased conference packages
- Catering during the entire conference
- Conference documentation

Please indicate your choice of workshop on Thursday, 23 February 2017
Workshop A | Workshop B | Workshop C

- A: Active noise control in HEV vehicles
B: Leading development of highly complex products within a complex organisation
C: Interior noise in electric cars: noise minimization and comfort

Only one discount applicable per person.

- CAN'T MAKE IT TO THE CONFERENCE? PURCHASE THE 2-DAY DOCUMENTATION FOR € 990,- +VAT.**
Documentation will be sent 6 weeks after the event

Delegate Details

Please fill out in Capitals!

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Position Email

Telephone Fax

Organisation

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BOOKING CODE

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Venue and Accommodation

Maritim Hotel Darmstadt, Germany
Address:
Rheinstraße 105
64295 Darmstadt
Telefon: +49 (0) 6151 878-0

Accommodation: A limited number of reduced rate rooms are available at the conference hotel. Accommodation can be booked by calling the central reservation number. Please always quote the booking reference **IQPC-Berlin**. Hotel accommodation and travel costs are not included in the registration fee.

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