

This conference will be co-located (two common plenary sessions) with the NAFEMS European Conference: CFD – Beyond the Solve. SPDM conference delegates have equal access to the CFD conference and visa verse.

Invitation & Conference Agenda*

European Conference on

Simulation Process and Data Management – SPDM

2 - 3 December 2015, Munich, Germany

www.nafems.org/spdm2015

We will commemorate 15 years of SPDM success in Munich which began with go-live of Virtual Insight at BMW on 19th December 2000. Josef Reicheneder of BMW group will deliver the first Keynote presentation, 15 Years SPDM@BMW, taking us on the journey from the first deployment of a commercial SDM solution through the migrations to next-generation SDM solution, the achievements of today and the challenges or the future. SDM is a core enterprise system at BMW. Ferdinand Dirschmid explained at the NAFEMS World Congress 2015 that SDM had been fundamental to the execution of the virtual engineering required to bring the iconic BMW i8 composite hybrid sports car into the showrooms in only 42 months. This entailed new body and powertrain concepts, new simulation methods, new manufacturing processes and a new factory; not just a new model based on existing technology.

BMW is not the only Munich-based company that relies heavily on SPDM for engineering success. Johann Beck of Audi in Ingolstadt near Munich will describe why efficient management of data is absolutely essential to minimising time to market for an ever widening range of vehicles and vehicle derivatives. Audi has a long history of driving SDM innovation and Mr. Beck will describe the evolving SDM architecture.

Munich has become a centre for SDM development as well as for SDM usage. Michael Schlenkrich, who led the original BMW project, will share his vision of future directions of SDM

based on 15 years of wide ranging SDM experience. Later in the conference Marko Thiele of Scale will describe the latest evolution of LoadCase Composer (LoCo) and its usage within the Audi vehicle simulation process.

Other Munich-based companies presenting include Tesis DYNAware who will speak about a distributed modularised model architecture for simulation of automotive electronic systems. The state of the art of SDM is also being advanced by the Technical University of Munich and Sebastian Schweigert will speak about process definitions and improvements for automotive suppliers.

Munich is not the only region of Germany represented as Thorsten Pohl will give a keynote on the deployment of SDM at GM he is leading out of Opel. Jan Theilen of Volkswagen will talk about their virtual process chain. Then Rainer Illig and Holger Wenzel of Dassault Systemes will discuss the management of simulation processes of different levels of maturity.

Automotive OEM's are also represented by Ralph Heimüller of MAN Truck & Bus who will speak about the effective management of material data for simulation. Another solution for materials data management will then be described by Reimund Dann of Thinkstep.

Jochen Boy of ProStep will lead a section describing evolving standards for automotive and aerospace industries including a paper on Long Term Archiving and Retrieval (LOTAR) from Albert Levy of Airbus Toulouse.

Adrian Murton from Airbus will give a keynote on the standards-based future of simulation collaboration and describe the development of the MoSSEC standard. Caroline Raick will describe the success of a common platform for the structural analysis of the A350WB program.

Contributions describing the deployment of SDM at Volvo-Eicher Commercial Vehicles in India, large scale multi-variable optimisation of aircraft systems from Datadvance of Russia and data-models for SDM from vCollab the USA complement the many papers submitted from within Europe.

The point of view of supplier companies will be represented with a keynote from Steve Minter of GKN Driveline describing how they will take forward their successful SDM deployment. The needs of medium sized companies will also be addressed. Several practitioners, including ISKO engineers :EM engineering methods and Mark Norris of theSDMconsultancy will speak about successful deployment of SDM into companies of all sizes.

It's not possible to describe all the topics which will be covered at this 3rd European SPDM conference. So please have a look at the agenda on the following pages and register for the conference at www.nafems.org/spdm2015.

We are looking forward to meeting you in Munich.

Mark Norris, Peter Bartholomew
NAFEMS SDM Working Group

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EUROPEAN SPDM & CFD CONFERENCES – COMMON SESSION

- 09:45 **Welcome and NAFEMS Introduction**
T. Morris (NAFEMS); M. Norris (Consultant); P. Bartholomew (Consultant); Members of the DACH CFD Advisory Board (CAB)
- 10:00 **15 Years SPDM@BMW**
J. Reicheneder (BMW Group)
- 10:30 **SPDM for CFD@BMW**
S. Jahnke (BMW Group)
- 11:00 **Strategies to Increase CAE Quality through Simulation Data Management**
J. Morawski, T. Pohl (Adam Opel); Z. Petrovic (Siemens PLM Software)
- 11:30 **Virtual Process Chain Production: SIMAN – Simulation Data Management@CONNECT**
J.-H. Theilen (Volkswagen)
- 12:00 **Lunch**

SPDM Conference Session 1

CFD Conference Session 1

- 13:00 **Handling the Constant Evolution of Simulation with SPDM Solutions**
M. Schlenkrich (MSC Software)
- 13:25 **Concept and Implementation of a Central Knowledge Framework for Simulation Knowledge**
P. Kestel, T. C. Sprügel, S. Wartzack (Univ. Erlangen-Nuremberg); T. Lehnhäuser (Ansys Germany)
- 13:50 **Complete Simulation Lifecycle Management at VECV**
V. Mulchandani, U. Shanker Gupta (Eicher Trucks and Buses, VE Commercial Vehicles); N. Hanagal (Altair Engineering India)
- 14:15 **SPDM Overkill – Too Expensive, Too Difficult, Too Much Overhead and No Added Value ?!?**
E. Niederauer (Siemens PLM Software)
- 14:40 **Coffee break**

- Integration of the CFD Simulation in the Development Process of Competition Motorcycles
G. Lindbichler, M. Perterer (KTM Technologies)
- Thermal Analysis of Heavy Duty Engine Exhaust Manifold using CFD
S. Eroglu, I. Duman (Ford Otosan)
- The Mahle Behr CFD Wizards: HVAC Wizard and HEEX Wizard
R. Stauch, G. Apostolopoulos, M. Weinmann, J. Schlottke, W. Kühnel (Mahle Behr)
- Frontloading CFD in the Automotive Product Development Process
M. Sabeur (Mentor Graphics)
- Coffee break

SPDM Conference Session 2

CFD Conference Session 2

- 15:20 **Managing Simulation Processes of Different Levels of Maturity**
H. Wenzel, R. Illig (Dassault Systems Deutschland)
- 15:45 **Successful Deployment of SPDM Solutions – Lessons Learnt from Early Adopters**
M. Norris (Consultant)
- 16:10 **Simulation Process and Data Management: How to Deploy SPDM and Support CAE Teams Efficiently**
S. Kleiner, M. Krastel (:em engineering methods)
- 16:35 **A First Full-cloud Design Space Exploration Platform**
S. Morozov, A. Prokhorov (Datadvance)
- 17:00 **Coffee break**

- The Influence of Mesh Characteristics on OpenFoam Simulations of the Driver Model
G. Fotiadis, V. Skaperdas, A. Iordanidis (BETA CAE Systems)
- One click - Multiparts to 3D Mesh
M. Schifko (ESS Engineering Software Steyr)
- Improving Thrust Reverser Performance through Design Exploration with Optimate+
G. Buccilli, A. Godfrey, D. Rittenberg (CD-Adapco)
- Interpretation of Verification and Validation for Computational Fluid Dynamics
NAFEMS AMWG, presented by C. Roger (CR Engineering)
- Coffee break

SPDM Session 3: Technologies

SPDM 4: Approaches including for Medium Companies

Optional: CFD Conference: BMW Welt Compact Tour

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| <ul style="list-style-type: none"> 17:30 Integrate Multi-Disciplinary Optimization into the Product Development Process
<u>M. Nicolich</u>, M. Gazzin (Esteco) 17:55 Simulation Data Mining as One Element of the Product-specific Knowledge Balance – a SPDM Perspective
<u>S. Hinsin</u>, M. Ruschitzka (TH Köln); P. Gust (Univ. of Wuppertal) 18:20 RDO meets PLM
D. Schneider (Dynardo) 18:45 Efficient Data Models and Tools for Effective SPDM Implementation
<u>P. Mandava</u>, G. Shastry, M. V. Uppalapati (Visual Collaboration Technologies) 19:10 Design Exploration in the Cloud: Automotive Seat Optimization for Robustness
<u>F.Y. Kocer</u>, E. Nelson (Altair Engineering) | <ul style="list-style-type: none"> The Role of Simulation in a Holistic Engineering Environment
<u>R. Illig</u>, H. Wenzel (Dassault Systemes Deutschland) Expansion of the Schaeffler Development Platform Speed with a Simulation Data Management Module
S. Sepp, <u>G. Göß</u> (Schaeffler Technologies); M. Krastel (:em engineering methods) An Approach for the Development of Requirements-Oriented Simulation Management
<u>S. Schweigert</u>, H. d'Albert, U. Lindemann (TU Munich) Flexible Management of CAE Processes, Resources, and Data for the Medium-Sized Business and Embedding in the PLM Process
M. Krause (ISKO engineers) Interpretation of Verification and Validation for Simulation Process and Data Management
NAFEMS AMWG, presented by C. Roger (CR Engineering) |
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BMW Welt – a Place of Discovery and Amazement.
BMW Welt is full of impressive facts and fascinating stories. Go on a discovery tour (40 min.). This tour covers all the main points of BMW Welt; you will find out interesting background information on the building, its special architecture and how it was created.

The BMW Welt Compact Tour also provides a glimpse behind the scenes, explaining the complex logistics of automobile delivery to customers from all over the world. Look forward to experiencing the various elements of BMW Welt and hearing interesting talks.
www.bmw-welt.com/en/

17:30 Bus coach
18:00 Tour 1 + 2 (each group max. 30 persons)

Please note:
Limited places, registration necessary - first come, first serve!

19:35 - 21:30 **EUROPEAN SPDM & CFD CONFERENCES – COMMON EVENT IN THE EXHIBITION**
Beverages, snacks & live music – time for discussions and product demonstrations

THURSDAY, 3RD DECEMBER 2015

European CFD Conference: CFD Beyond the Solve – Agenda

EUROPEAN SPDM & CFD CONFERENCES – COMMON SESSION

- 08:15 **Introduction**
M. Norris (Consultant); P. Bartholomew (Consultant); Members of the DACH CFD Advisory Board (CAB)
- 08:30 **Next Steps in SPDM**
S. Minter (GKN Driveline)
- 09:00 **MoSSEC: A Proposed Standard for Sharing Modelling and Simulation Information in a Collaborative Systems Engineering Context**
A. Murton (Airbus UK)
- 09:30 **Simulation Data Management and Process Chain at Audi**
A. J. Beck, K. Gruber (Audi)
- 10:00 **Coffee break**

European CFD Conference: CFD Beyond the Solve – Agenda

SPDM Conference Session 5

- 10:40 **Data & Process Management for Collaboration in Systems Engineering**
G. Staub (PD Tec)
- 11:05 **LoCo – An Innovative Process and Team Data Management Solution for Simulation**
M. Thiele, T. Landschoff (Scale); A. J. Beck (Audi)
- 11:30 **Simulation Data Management in Pre- and Postprocessing**
D. Katramados, A. Roubies, D. Krontsos (BETA CAE Systems)
- 11:55 **A Comparison and Synergies between SPDM and a Popular “Democratization” Platform**
J. Betts (Front End Analytics); D. Silver (EASA Software); S. Dewhurst (EASA)
- 12:20 **Lunch**

CFD Conference Session 3

- The FlowSimulator— A Software Framework for CFD-related Multidisciplinary Simulations**
L. Reimer (DLR - German Aerospace Center)
- Comparison of the ASMO Car Model with Experimental Data and Simulations**
M. Gruetzmacher (Mentor Graphics)
- Aero-Vibro-Acoustics for Wind Noise Application**
M. Oswald (Ansys Germany)
- Simulation-ready CAD for Fast Turn-around Time in CFD and Optimization**
S. Harries, M. Brenner, J. Palluch (Friendship Systems)

SPDM Conference Session 6: Standards or not?

- 13:20 **Standardization of CAE Data Management – Collaborative CAD/CAE Integration with CAE Services**
M. Krastel (:em engineering methods); J. Boy (Prostep)
- 13:45 **xMCF – Standard for Documenting Connection Information**
C. Franke (Prostep); G. Zhang (Volkswagen); M. Weinert (Ford Germany)
- 14:10 **LOTAR Engineering Analysis and Simulation Initiative**
A. Levy (Airbus CIMPA)
- 14:35 **Role-based Simulation Object Management as an Enabler for Democratization in Collaborative Virtual Engineering**
C. Hepperle, C. Gnanndt (Tesis DYNAware)
- 15:00 **Coffee break**

CFD Conference Session 4

- Optimization Process for an Automotive Flap using an Automated FSI Workflow**
M. Ratzel, W. Dias (Altair Engineering)
- Iterative Coupling of Flow Simulation and Topology Optimization for Long-Fiber-Reinforced Plastics**
M. Spadinger, A. Albers (Karlsruhe Institute of Technology)
- Optimized Ship Design Using Heeds & STAR-CCM+**
D. Tatum, D. Preston (Downey Engineering); N. Chase (Red Cedar Technology); T. Yen, G. Buccilli (CD-Adapco)
- Workflow for an Efficient Usage of Open-Source Solver Technology for CFD and FEA**
U. Heck (DHCAE Tools)
- Coffee break**

SPDM Conference Session 7

- 15:30 **Management of Material Data for a Mid-Size Simulation Work Group: Experiences and Recommendations**
R. Heimüller (MAN Truck & Bus)
- 15:55 **Integrated Material Data Management**
R. Dann (thinkstep)
- 16:20 **The Airbus A350 XWB Aircraft’s Structural Detailed Analysis with a Common Shared Platform**
C. Raick, F. Berger (Siemens PLM Software); n.n. (Airbus)
- 16:45 **Wrap-up / Farewell**
M. Norris (Consultant); P. Bartholomew (Consultant)
- 17:00 **End of SPDM Conference**

CFD Conference Session 5

- Automation for Efficient Application of OpenFOAM to Industrial Problems**
H. Kröger (Univ. of Rostock)
- Accelerating CFD Workflow Using GPU’s**
M. Stanic, S. Adami (FluiDyna)
- Femzip-CFD: Taming of the Data Pile**
S. P. Müller, P. Sunil Banerjee (Sidact)
- Wrap-up / Farewell**
Members of the DACH CFD Advisory Board (CAB)
- End of CFD Conference**

Optional Pre-Conference Training Sessions on Tuesday, 1 December

Courses are not included in conference fee – registration required – seats limited – first come, first serve: 160 Euro + VAT (for three courses)

15:00 - 16:30:
Introduction to SPDM
by Peter Bartholomew

This session will provide an overview to the fundamentals of Simulation Data Management. It will serve equally well as a basic introduction to those that are new to the technology, and a refresher for those who already have an elementary understanding of the concepts. It will provide an excellent foundation for delegates who want to learn more about SPDM.

16:30 - 17:30:
Introduction to SPDM Solutions
by Mark Norris

This session will provide an overview of the four generations of SPDM solutions, the types of suppliers of SPDM solution (PLM vendors, CAE Vendors, SDM vendors, Standards Solution Vendors,...) and the types of SPDM solutions available. This session is particularly relevant to delegates investigating the acquisition of an SPDM solution.

17:30 - 19:00: Introduction to Business Value from SDM – NAFEMS White Paper
by Mark Norris

There are many strategies that companies can deploy when looking to implement an SDM solution. The NAFEMS SDM Working Group has developed and published a White Paper which has the clear objective of helping engineers to understand and to communicate the business value of SDM to their organization. This short training session will provide a summary of the White Paper and an interpretation of its key messages.

Hardware and software exhibition

Conference venue

Dolce Munich Unterschleißheim
Andreas-Danzer-Weg 1
85716 München/Unterschleißheim, Germany
www.DolceMunich.com

Hotel accommodation

Conference participants will get a reduced rate in the Dolce Munich Unterschleißheim when booking before 23 Oct. 2015. Please book your accommodation by using the online booking link on the conference website www.nafems.org/spdm2015 or by phone: Reservations Local Phone: +49 89 370 530 851 (Keyword „NAFEMS“).

Exhibition and sponsoring

The conference will be accompanied by an exhibition of software and hardware vendors, solution providers, and consultants. There are several exhibition and sponsoring opportunities available. Please request further information.

Conference language

English

Registration fees

NAFEMS members: Free
NAFEMS members can use seminar credits towards free attendance at this event. This event will charge four seminar credits per delegate.
Member without seminar credits: 490 Euro.
Non NAFEMS members: 695 Euro.
The registration fee includes conference attendance, proceedings, lunches, break refreshments and get together. Hotel accommodation is not included. All plus VAT if applicable.

Contact and further information

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The conference will be organized by the NAFEMS SDM Working Group

www.nafems.org/about/tech/sdmwg
... and other NAFEMS Working Groups
www.nafems.org/about/tech

More information about the conference and online registration at www.nafems.org/spdm2015

Please complete and fax to +49 - 80 51 - 96 74 3 37 or send registration form by e-mail to roger.oswald@nafems.org

Online registration at www.nafems.org/spdm2015

- I herewith register for the NAFEMS European Conference: **Simulation Process and Data Management – SPDM** 2 - 3 December 2015, Munich, Germany
 - I am NAFEMS member free using 4 seminar credits
 - I am NAFEMS member – no more seminar credits available: 490 Euro plus VAT
 - I am not NAFEMS member: 695 Euro plus VAT
- Please send me exhibitor information.
- Please send me information about sponsoring opportunities.
- I herewith register for the optional **three pre-conference training sessions**: 160 Euro plus VAT

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