



nwC 2021

NAFEMS WORLD CONGRESS

25-29 OCTOBER | SALZBURG | AUSTRIA

A WORLD OF ENGINEERING SIMULATION

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spdm INTERNATIONAL CONFERENCE
Simulation Process & Data Management



Congress special:

CAE in Automotive Development: State of the Art, Technology Changes and Future Trends

Submit your abstract by 16 April 2021

www.nafems.org/congress



Congress special “Automotive”

The automotive engineering community is now confronting the biggest challenge since its inception. Crucial environmental problems like climate change and the demand of a smart and safe mobility require fundamental alternative design strategies for any kind of vehicle. New drive systems – based on battery or hydrogenous units - will be taken into account as well as a massive increase of software, sensors and electronics.

Furthermore, time to market has to be decreased to be competitive. Balancing of automation, agility, traceability and process governance is challenging the industry and has a significant impact on virtualization of product development and lifecycle integration.

Now there is a tremendous need for appropriate technologies to fulfill these requirements. Well known virtual techniques have to be extended, cutting edge methods are needed to face the challenges. Hence the automotive industry is forced to apply suitable numerical methods for updating the processes of design and manufacturing in order to remain competitive.

Following the NAFEMS international seminar on “Simulation in the Automotive Industry: Creating the Next Generation Vehicle” which was held from 16 – 18 March 2021 these topics will be focused at the hybrid NAFEMS World Congress from 25 – 29 October 2021 (Salzburg, Austria and online) in dedicated presentations, panel discussions and workshops – covering state of the art, technological challenges as well as future trends.



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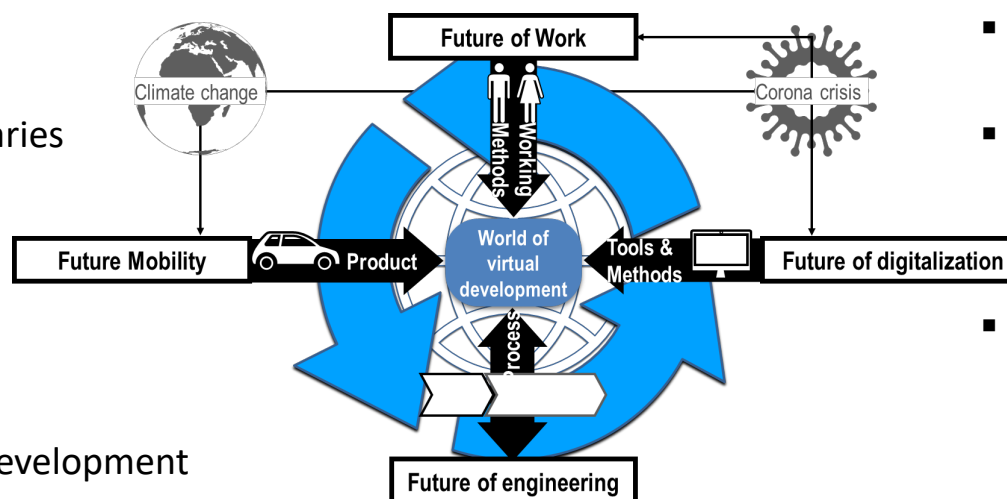
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Key drivers and challenges:

- Environmental impact (technology, mobility)
- Extending system boundaries
- Speed, time to market, effectivity
- Flexibility, traceability
- Handling of increasing system complexity
- Collaborative cross-site development
- Continuous integration / development
- Data driven development



Key Discussion Topics:

- Behaviour simulation of new functions and technology
 - Electrical engine, battery, fuel cell etc.
- Connectivity of digital car systems
 - Assistance capabilities, evolution of driving control
 - OTA
 - Cybersecurity
- Effectivity of development
 - Data management, model orchestration
 - Function-based design, generative design
 - CI/CD, process automation
 - Digital Twin - availability of connected data of all systems of the car along the lifecycle
- Process quality, process governance
 - Valid data for deep learning processes
 - Reliability, simulation governance etc.



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Following contributions / structure is planned:

- Invited speakers for specific hot topics and visionary in automotive context
- Presentations on state of the art and future trends of virtualization (industry and research) (process efficiency, numerical methods, data driven engineering, orchestration, simulation and process governance etc.)
- Panel and group discussions

Technical champions of this Congress special are:

- | | |
|------------------------|----------------------------------------------------------------------------------------------------------------|
| • Dr. Werner Dirschmid | formerly Audi, consultant, chairman of the NAFEMS DACH Steering Committee, GER |
| • Mario Felice | formerly Ford Motors, virsolTech Engineering Consulting, member of the NAFEMS Americas Steering Committee, USA |
| • Christoph Gümbel | formerly Dr. Ing. h.c. Porsche, Future Matters, SUI |
| • Gerhard Göß | Schaeffler Technologies, member of the NAFEMS DACH Steering Committee, GER |
| • Dr. Bernd Fachbach | Virtual Vehicle Research, AUT |
| • Thorsten Pohl | Stellantis, Opel Automobile, GER |



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Congress special “Automotive”



The Congress special „Automotive“ will be part of the NAFEMS World Congress from 25 – 29 October 2021 – a hybrid Congress in Salzburg, Austria, and online

The Congress will cover every aspect of engineering modelling, analysis and simulation. That includes core topics like FEA, CFD, and MBD, as well as examining the next steps for our community and the technology. We will also be hosting the Int. SPDM conference, as well as the Int. Multiphysics Simulation conference as part of the event. This event will be a platform for top specialists worldwide to exchange knowledge on a high level also in favor of the automotive industry. The Congress will be genuinely accessible to every single member of the analysis and simulation community.

NAFEMS World Congress 2021 will be a hybrid event and the first of its kind in the simulation community. We combine the face-2-face event with virtual online components. This includes e. g. live video streaming (in/out) of keynotes and sessions, online presentations, online communication and discussion facilities, live blogs, video live channels, and the integration of social media tools. Interaction and networking will be possible through video, audio and chat.



**This is not just another conference.
This is where the simulation world
comes together as one, in an
independent, international forum to
push engineering analysis forward.**

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