



Invitation

Integration of Numerical Simulation (CFD and FEA) into the Product Development Process

In product innovation processes, simulation driven design and virtual manufacturing have been implemented to reduce physical testing and to improve product behavior and performance in order to meet customers needs and expectations. Computer simulation not only replaces physical prototypes, but it also introduces a complete new way of experimenting with ideas and enabling the design engineer to explore, test and manipulate the product and receive fast feedback.

Today engineers can perform different types analyses on a 3D CAD model with bi-directional associativity, allowing the user to make changes to their model in a tightly integrated environment. The recent enhancements in FEA and CFD technology, combined with improved meshing technology and faster computers allows for real time interactive process.

Seminar objectives

The seminar is intended as a forum for designers, engineers and companies interested in getting a comprehensive overview and gain knowledge about the latest advances in simulation driven product development. The participants will be shown how leading companies have adopted the technology, illustrated with practical examples on how the technology is being applied in different industries. Thus, the current state of the art and trends as well as future challenges will be presented for the participants.

Hardware and Software Exhibition

The seminar will be accompanied by an exhibition featuring the latest software and hardware developments. The exhibition is an ideal opportunity for hardware and software vendors.

Bjorn Tollefsen, EDR Engineering Data Resources as Member of the NAFEMS Nordic Steering Committee and technical coordinator of Structural Analysis (FEA) seminar

Stefan Olovsson, Fluent Sweden AB Member of the NAFEMS Nordic Steering Committee and technical coordinator of the CFD seminar

Please forward this invitation to interested colleagues.

NAFEMS

NAFEMS was founded in 1983 with a specific objective namely:

„To promote the safe and reliable use of finite element and related technology.“

Over the intervening years, NAFEMS has become an independent, not-for-profit, international membership association, owned by its member's. The scope of activities spans the original finite element methods, through CFD to Optimization. As new application areas and techniques constantly evolve, NAFEMS becomes involved to create awareness and deliver appropriate education and training. To more closely reflect the aims of the evolved organization a new mission statement was produced early in 2000.

- To facilitate international industry, academia and government collaboration, that leverages unbiased multi-disciplinary engineering expertise.
- To improve product and process simulation.
- To have a positive impact on quality, profitability, schedules and safety.

NAFEMS Nordic Steering Committee

- J. Granlund (Abaqus Scandinavia, S)
- B. Tollefsen (Engineering Data Resources AS, N)
- S. Olovsson (Fluent Sweden AB, S)
- A. Back-Pedersen (Grundfos Management A/S, DK)
- E. Weibust (IBM Sweden, S)
- J. E. Halden (Kongsberg Devotek, N)
- M. Eriksson (Lund Institute of Technology, S)
- H. Droege (Medeso AB, S)
- A. Torvund (MSC.Software AS, N)
- N. Dam Lerke (Nokia Mobile Phones, DK)
- G. Horigmoe (Norut Technology Ltd, N)
- T. Hansen (Novo Nordisk, DK)
- J. Ikkala (Rautaruukki Oy, FI)
- F. M. Jensen (Risoe National Laboratory, DK)
- V. Sharan (SonyEricsson Mobile Comm., S)
- H. Ilstad (Statoil ASA, N)
- M. Määtänen (University of Helsinki, FI)
- P. Ekedahl (Volvo Aero Corporation, S)

The seminar is sponsored by



INVITATION & AGENDA

NAFEMS Nordic Seminar:

INTEGRATION OF STRUCTURAL ANALYSIS (FEA) AND COMPUTATIONAL FLUID DYNAMICS (CFD) INTO THE PRODUCT DEVELOPMENT PROCESS

2nd - 3rd November 2006

Gothenburg, Sweden



Agenda, 2nd November 2006

08:15 **Optional: Guided tour through Volvo Truck Facilities**
 12:00 Registration

PLENARY SESSION – NUMERICAL SIMULATION

13:00 **Welcome and NAFEMS Presentation**
 B. Tollefsen (Engineering Data Resources as, Norway); S. Olovsson (Fluent Sweden AB, Sweden); A. Oswald (NAFEMS, United Kingdom)

13:20 **Keynote Presentation: Benefits of Integration of Numerical Simulation into the Product Development Process**
 to be announced

13:50 **Application of a Hybrid CFD/BEM Approach to the Prediction of the Sound Generated by the Flow Past a Confined Cylinder**
 P. Martinez, C. Schram (LMS International, Belgium)

14:15 **Best Engineering Practice in Design of Offshore and Ship Structures**
 K. Aamnes (DNV Software, Norway)

14:40 Coffee break

15:20 **Trawl Impact on Pipelines: Development of a Fluid Structure Interaction Methodology at Statoil**
 E. Carlsson (Fluent Sweden AB, Sweden); H. Ilstad (Statoil A/S, Norway); J. Granlund (Abaqus Scandinavia, Sweden)

15:55 **Two-way Fluid-structure Interaction Simulation of Wind Turbine**
 C. Nørgaard (Medeso AB, Sweden)

16:20 **Modelling and Simulation of Fiber Dynamics in Air Flows for Non-Woven Processes**
 M. Günther (Fraunhofer ITWM, Germany)

16:45 **Fluid Structure & Dynamic Considerations in Biomedical Applications**
 Y. Ventikos (University of Oxford, United Kingdom); K. Shah, M. Megahed (ESI Group, France)

17:10 Coffee Break

17:35 **Major Research and Development Initiatives**
 P. Bjellheim (Moldflow Scandinavia AB, Sweden)

18:00 **Exhibitor Presentation: Altair Engineering**
 M. Hermodsson (Altair Engineering AB, Sweden)

18:25 **Sponsor presentation: Hewlett Packard**
 S. Perzon (Go Virtual, Sweden)

18:50 **Beverages & Snacks in the exhibition area sponsored by**



Agenda, 3rd November 2006

PARALLEL SESSION - CFD

08:30 **Keynote-Presentation: Designing Aseptic Filling Machines with CFD and Dynamic Similarity Experiments**
 J. Olsson, U. Lindblad (TetraPak AB, Sweden)

09:10 **Exhibitor Presentation: Fraunhofer ITWM**
 M. Günther (Fraunhofer ITWM, Germany); R. Rundqvist (Fraunhofer-Chalmers Research Centre for Industrial Mathematics, Sweden)

09:35 **Exhibitor Presentation: CD-adapco Star-CAD Series in the Product Development Process**
 A. Read (CD-adapco, United Kingdom)

10:00 Coffee break

10:40 **Automated CFD Blade Design within a CAD System**
 P. Andersson (Luleå University of Technology, Sweden); M. Ludvigson, O. Isaksson (Volvo Aero Corporation, Sweden)

11:05 **Simulation Based Design Reliable CAD – Multi-physics Interaction**
 S. Kini, W. Ottow, M. Megahed (ESI Group, France)

11:30 **Sponsor Presentation: Fluent Ansys/Fluent CFD Software in the PLM Process**
 S. Olovsson (Fluent Sweden AB, Sweden)

11:55 Lunch

13:15 **Use of CFD in Product Design**
 C. Fyhr (Volvo Cars, Sweden)

13:40 **Automatic Optimisation of Aerodynamic Designs Using CFD Based Methods**
 H. Strandberg (Esteco Nordic AB, Sweden); F. Campos, S. Weston (ICON, United Kingdom); P. Geremia (Esteco UK, United Kingdom)

14:05 **On Integration of CFD in the Product Development Process for the Automotive Industry**
 S. Perzon (Go Virtual, Sweden)

14:30 **Designing Paper Forming Fabrics using CFD**
 R. Rundqvist (Fraunhofer-Chalmers Research Centre for Industrial Mathematics, Sweden)

14:55 **Summary and Farewell**
 S. Olovsson (Fluent Sweden AB, Sweden)

15:00 Closure

PARALLEL SESSION - FEA

08:30 **Use of Structural Simulations in Mobile Phones Development in General and Concept Phase in Particular**
 T. K. Petersen (Nokia Danmark A/S, Denmark)

08:55 **Conceptual Design of Optimal Structural Properties of Modular Car Product Families**
 B. Torstenfelt, A. Klarbring (Linköping University, Sweden)

09:20 **Discussion on Integration Issues**
 B. Tollefsen (EDR Engineering Data Resources as)

10:00 Coffee break

10:40 **Industrial Exploitation of CAE Through Pido modeFrontier Technology**
 Å. Burman, H. Strandberg (Esteco Nordic AB, Sweden); L. Bucchieri (EnginSoft SpA, Italy)

11:05 **Optimal Design of Washing Machine Cabinet Using Design for Six Sigma**
 L. Ballesteros, F. Elizarraraz, O. Barrios (Mabe Technology and Projects, México); A. Dorantes (Technological Institute of Querétaro, México)

11:30 **Design for Reliability of a Washing Machine Supports System**
 J. L. Moreno Jimenez, L. Ballesteros (Mabe Technology and Projects, México); R. Lesso (Technological Institute of Celaya, México)

11:55 Lunch

13:15 **Progressive Damage in Layered Composites and its Finite Element Modeling**
 L. Zeng (ÅF-Process AB, Sweden)

13:40 **Analysis of the Eccentricity Problem in Backward Can Extrusion**
 J. Danckert (Aalborg University, Denmark)

14:05 **Creep buckling Simulation of a T-junction Pipe**
 Anders Bergqvist, Mikael Lauth (Medeso AB, Sweden)

14:30 **Numerical Medical Device Optimization**
 T. S. Hansen (Novo Nordisk, Denmark)

14:55 **Summary and Farewell**
 B. Tollefsen (Engineering Data Resources as, Norway)

15:00 Closure

HARDWARE AND SOFTWARE EXHIBITION ON BOTH DAYS

Organization

Venue

Radisson SAS Scandinavia Hotel
Södra Hamngatan 59-65
SE-401 24 Göteborg, Sweden
Tel: +46 - 31 758 50 40
Fax: +46 - 31 758 50 04
www.radissonsas.com

Attendee fee

Non NAFEMS member: Euro 450,- / Person *
NAFEMS member: free

Member of NAFEMS get two free seminar places per member year

- if already used, NAFEMS member will get a reduced fee:

Euro 360,- / Person *

Included are conference CD, lunch, coffee breaks and drinks.

Hardware and Software Exhibition

Costs for empty booth space of max. 2.5 m length including power supply: Euro 350,- *

All personal needs to be registered as regular attendee.

Registration

Please register with attached registration form, via e-mail (nordic@nafems.org) or visit the NAFEMS website www.nafems.org/nordic.

Hotel accomodation

Radisson SAS Scandinavia Hotel. Please book your hotel room by yourself. You will get a special room rate (1.450,- SEK/night, single room incl. breakfast - if available) when using the booking reference „NAFEMS“. Costs are not included in attendee fee.

Optional tour through Volvo Truck facilities

Guided tour through Volvo Truck facilities in Tuve / Gothenburg on 3rd November 2006. A shuttle bus will start 8:15 at the Hotel Radisson SAS. The tour starts at 9:00 and ends at 10:00. It is limited to a maximum of 45 persons. The shuttle bus will bring you back to the Hotel Radisson SAS (approx. 45 min.).

It is necessary to register for this tour in advance.

Euro 20,- / Person for shuttle bus

*** All costs + VAT if applicable.**

Contact

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e-mail: nordic@nafems.org

If you work with simulation, you should be part of NAFEMS. Join now!

More info: www.nafems.org

Registration Form / Feedback

- I herewith register for the NAFEMS seminar in Gothenburg, Sweden, 2nd - 3rd November 2006: „Integration of Numerical Simulation into the Product Development Process“ –

On the second day I will attend the parallel session:

- Structural Analysis (FEA)
 CFD (Computational Fluid Dynamics)

My company is

- not NAFEMS member (Euro 450,-*)
 NAFEMS member using my free place (free*)
 NAFEMS member without a free place (Euro 360,-*)

You will get a confirmation by e-mail.

All costs + VAT if applicable.

- I herewith register for the tour through Volvo Truck Facilities (20,- Euro for shuttle bus)

- I would like to register for the exhibition

Empty both space of 2,5 m length, power supply: 350,- Euro
Myself plus _____ more persons will attend (please register booth staff for regular attendee fees separately)

- We are interested in sponsoring. Please contact me.

- Please provide more information on NAFEMS:

- | | |
|---|---|
| <input type="checkbox"/> Membership | <input type="checkbox"/> Seminars |
| <input type="checkbox"/> Certification „Registered Analyst“ | <input type="checkbox"/> EU-Projekts |
| <input type="checkbox"/> FEM Magazine „Benchmark“ | <input type="checkbox"/> World Congress |

Online registration at www.nafems.org -> nordic

Sender

Company / University: _____

Dept.: _____

Title: _____

First name, last name: _____

Street: _____

Zip-code, city: _____

Telefon: _____

Fax: _____

e-mail: _____

Date, Signature: _____

Please complete and return to NAFEMS Contact Nordic:
Schillerstraße 6, D-85567 Grafing, Germany
Tel. +49(0)8092-83550, Fax +49(0)8092-83551
e-mail: nordic@nafems.org

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| <input type="checkbox"/> Certification „Registered Analyst“ | <input type="checkbox"/> EU-Projekts |
| <input type="checkbox"/> FEM Magazine „Benchmark“ | <input type="checkbox"/> World Congress |

Online registration at www.nafems.org -> nordic

Sender

Company / University: _____

Dept.: _____

Title: _____

First name, last name: _____

Street: _____

Zip-code, city: _____

Telefon: _____

Fax: _____

e-mail: _____

Date, Signature: _____

Please complete and return to NAFEMS Contact Nordic:
Schillerstraße 6, D-85567 Grafing, Germany
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