

## MpCCI Flowmaster Adaptor announced

**Towcester, United Kingdom, 24 April 2009** – Flowmaster Limited are pleased to announce the availability of a coupling adaptor between Flowmaster and MpCCI, bringing together the speed and robustness of 1D system modelling with the complexity of 3D CFD and CAE tools.

MpCCI (Mesh-based parallel Code Coupling Interface) has been developed by the Fraunhofer-Institute for Algorithms and Scientific Computing (Fraunhofer SCAI) to link a wide variety of simulation programs including the 3D CFD applications, Star-CD (from CD-adapco) and Fluent.

Under a formal cooperation agreement, Fraunhofer SCAI have partnered with Flowmaster to develop the coupling adaptor which enables 'best-in-class' 1D-3D co-simulation between Flowmaster (for calculations of the entire flow system) and CFD (to perform detailed computational calculations).

Driven by the need from organisations with large multidisciplinary, multifunctional project teams, the MpCCI Flowmaster Adaptor has been developed to give stakeholders in the design process the ability to understand how various simulation models interact with each other in pursuit of a virtual prototype.

David Kelsall, Product Manager for Flowmaster Limited explains "Developing a 3D CFD model for an entire system – such as an automotive cooling system – presents significant challenges. Creating the computational models and their meshes may take a long time and the total number of cells required may make the calculations intractable (i.e. they may take too long, if they can be done at all). By co-simulating 1D with 3D CFD, more realistic boundary conditions and component models can be obtained, providing a deeper understanding of complex engineering systems

Already we are beginning to see the benefit of the MpCCI Flowmaster Adaptor as we have been working with key customers to run pilot projects using MpCCI to link their 1D Flowmaster (system) models with 3D-CFD (Fluent) models, modelling very detailed behaviour in part of the system."

"During the last 2 or 3 years we received an increasing number of requests for this type of 1D-3D solution. In particular engineers from the automotive, aerospace and turbine sectors have asked for a standardised software solution to combine their overall system design with realistic 3D fluid analysis of critical components. The MpCCI Flowmaster Adaptor will provide these industrial users with a new level of design and analysis capabilities" adds Klaus Wolf, Deputy Head of Simulation Engineering Department at Fraunhofer SCAI.

MpCCI and the Flowmaster code adaptor have been developed and are distributed by Fraunhofer SCAI. For more information, please contact [mpcci@scai.fraunhofer.de](mailto:mpcci@scai.fraunhofer.de) or visit <http://www.mpcci.de>.



**Image - Flowmaster Limited & Fraunhofer Institute at the MpCCI UGM in Germany.**

Above (left to right): Klaus Wolf (Fraunhofer-Institute SCAI Deputy Head of Department Simulation Engineering), Morgan Jenkins (Flowmaster Product & Marketing Director), Henning Staufenberg (Flowmaster GmbH Managing Director), Ing. Inf. Pascal Bayrasy (Fraunhofer-Institute SCAI - Senior Software Developer) & David Kelsall (Flowmaster Product Manager).

**About Flowmaster Group**

Flowmaster Group is an International organisation with over 18 years experience providing industry leading fluid systems simulation software to the aerospace, automotive, marine, oil & gas, power generation, process, rail and water industries. With its headquarters in the United Kingdom, the Flowmaster Group employs 70 people and has offices in the USA, Germany and India.

Flowmaster system simulation software enables design engineers and analysts to understand the complex internal flow and thermal effects within fluid systems at the concept stage and throughout the development process. Flowmaster provides users with a greater understanding of fluid systems much earlier, increasing quality and performance whilst shortening the development cycle.

For more information on Flowmaster, visit: [www.flowmaster.com](http://www.flowmaster.com) or email [info@flowmaster.com](mailto:info@flowmaster.com)

### **About Fraunhofer SCAI**

Fraunhofer SCAI is a member Institute of the Fraunhofer-Gesellschaft, which undertakes applied research in Germany for the benefit of industry and government.

Fraunhofer SCAI specialises in algorithms and numerical methods and has developed MpCCI (Mesh-based parallel Code Coupling Interface) to link together a wide variety of simulation programs, including the 3D CFD applications, Star-CD and Fluent.

Most typically, MpCCI enables multi-physics or fluid structure interaction computations between various commercial applications including Abaqus, ANSYS, ANSYS Fluent, Flowmaster, Flux, ICEPAK, MSC.Marc, Permas, Star-CD and RadTherm; further code interfaces are under development. An API may be used to adopt own internal or research codes to the MpCCI environment.

For more information on Fraunhofer SCAI, visit <http://www.scai.fraunhofer.de/>

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