



Simcenter FLOEFD Enhancement Value

Introducing Simcenter FLOEFD 2020.1

Easy-to-use CAD embedded Concurrent CFD

For analysis to become an integral part of the design process, it must be easy to use and able to adapt readily to your design process. Developed for engineers, Simcenter FLOEFD turns CFD analysis into a plug-in for CAD. Because of its intuitive interface, Simcenter FLOEFD is extremely easy to use – in fact, most design engineers report that they can use Simcenter FLOEFD with less than 8 hours of training.

Better Products, Faster

Award winning Simcenter FLOEFD is 'Concurrent CFD', fully embedded CFD analysis software that enables Design Engineers to create better products, faster and:

- Improve product performance, functionality and reliability
- Reduce physical prototyping and production costs
- Minimize risk of making design mistakes
- Save both time and money by reducing design times and speeding up workflow

Quickly generate reports

You can create and distribute your animated results as well as quickly generate reports in Microsoft® Excel and Word, including all your favorite plots

Analysis Wizard

Simcenter FLOEFD's powerful wizard guides you through the problem set-up so you don't forget any important steps before the solution step solving the problem.

Effortless what-if testing

Perhaps the most powerful feature of Simcenter FLOEFD is the ease with which you can conduct "what-if" analysis. Easily modify your models and immediately analyze them: Simcenter FLOEFD helps you create multiple variations of your designs by modifying your solid model without needing to reapply loads, boundary conditions, etc. Simply compare your many design options and choose the best one for your final design!

In addition, Simcenter FLOEFD includes a Parametric Study tool which significantly increases the speed of parametric analyses such as varying boundary conditions or mesh settings. And using the Compare Tool, which makes identifying the best design variant faster, you can compare plots and numerical data across multiple projects to select the best possible option.

Multi-physics analysis

Simcenter FLOEFD's generic interface to NASTRAN structural analysis modules allows you to export pressure and temperature data for structural or thermal simulation.

1D-3D CFD simulation

With this unique combination, you can characterize the more complex components of a system in 3D (FLOEFD) and easily insert those components into the 1D system-level model (Flomaster) for simulation.

Simcenter FLOEFD Support

When you buy products like Simcenter FloEFD that improve your design productivity and integrate tightly into your business, a comprehensive support program should be seen as an integral part of your product purchase.

Support is the insurance that allows your employees to concentrate on their work, while our support staff helps keep your downtime to a minimum and moves your project forward faster.

Key Support Benefits

- Software enhancements to bring you the latest improvements in product functionality, usability, and performance
- [Support Center](#) for rapid, secure access to online support
- Technical support backed by an award-winning support organization

What's New in Simcenter FLOEFD 2020.1 (Apr 2020)

- **BCI-ROM.** Reduced Order Modelling is an approach to derive a dynamic compact thermal model from a thermal simulation model. The objective is to create a model that solves much faster, while maintaining predictive accuracy in space and time. The Boundary Conditions Independent (BCI) ROM allows you to create the compact model by providing locations of the heat sources (as volume heat sources), temperature monitor points (as point goals), heat transfer coefficients on bounding faces (as wall boundary conditions) and specifying a range of heat transfer coefficient minimum and maximum values. After creating the model, the temperature in the monitor points are obtained much faster (in seconds and minutes) by given exact power dissipation (can be time-dependent) and heat transfer coefficients. The BCI-ROM is a conduction-only model, radiation and Joule heating are not supported. Requires “**BCI-ROM and Package Creator**” or “**Electronics Cooling Center**” module.
- **Thermal Netlist Extraction.** Using BCI-ROM you can convert a task into a thermal netlist (in *.sp format) which can be used by a Spice based electro thermal system simulation tool such as Mentor Eldo. Requires “**BCI-ROM and Package Creator**” or “**Electronics Cooling Center**” module.
- **Package Creator.** Package Creator is a new tool that specializes in the rapid creation of electronic package models based on a library of IC package templates and user customization. An IC package model contains geometry, material and heat sources definition. Requires “**BCI-ROM and Package Creator**” or “**Electronics Cooling Center**” module.
- **Electrical Element.** A thermo-electrical compact model allows the addition of a component into a DC electro-thermal calculation by the given component's electrical resistance. The corresponding Joule heat is calculated and applied to the body as a heat source so you don't need to have a detailed model of a component to take it into account in the electro-thermal DC calculation. A Resistor element uses the total electrical resistance specified. A Wire element automatically calculates the resistance based on a wire's material, length and cross sectional area, and optionally you can specify the thermal resistance of the wire's insulator. A Joint element virtually (no body is necessary) connects two faces. Requires “**Power Electrification**” or “**Electronics Cooling Center**” module.
- **ECXML Import.** You can now import Electronics Cooling XML, an open neutral file format to share design models among different thermal simulation toolsets.
- **Battery Model Extraction.** Extraction of Equivalent Circuit Model (ECM) input parameters from experimental data. Requires “**Power Electrification**” module.
- **Battery ECM of 3rd order.** The 3rd order ECM is now supported for battery simulation. Requires “**Power Electrification**” module.
- **Multiple Edit for batteries.** Multiple edit definition is available for a Battery feature. Requires “**Power Electrification**” module.
- **Import plots from Scene.** You can copy a results feature (plots, parameters, etc.) to other models by using a Scene template or Scene Image (*.efdsScene).
- **Improvement of setting the Custom Visualization parameters.** User-defined post-processing parameters can now depend on other user-defined post-processing parameters.
- **Rotating angle associated goal.** Rotating Region has a new Rotating Angle goal associated with the feature.
- **Shock waves stabilization.** In case of shock waves with the Mach number greater than five enabling this option allows to dampen oscillations.
- **API Enhancement.** You can now add the Thermal Contact Resistance, change the Gravity, and change the Default Solid.
- **Create curve from flow trajectory.** You can now create curves from a flow trajectory in Simcenter FLOEFD for CATIA V5.
- **Rebranding FloEFD.** FloEFD is now renamed to **Simcenter FLOEFD**. FloEFDView is renamed to **Simcenter FLOEFD Viewer**.

About Mentor
Customer Support

Mentor Graphics offers leading support for EDA tools, providing expert response to technical issues for the complete suite of Mentor Graphics products. We offer a smooth transition to product enhancements and new releases, access to technical assistance, an ever-expanding array of online solutions and optional services for special situations.

On Support Center You Can

- Troubleshoot technical issues
- Download latest releases
- Reference documentation
- Manage Service Requests
- Manage & download licenses
- Add, discuss and vote on product improvements with [Mentor Ideas](#)
- Learn, share and network with other users on [Mentor Communities](#)

©2019 Mentor Graphics Corporation, all rights reserved. Mentor products and processes are registered trademarks of Mentor Graphics Corporation. All other trademarks mentioned in this document are trademarks of their respective owners.

Corporate Headquarters
Mentor Graphics Corporation
8005 SW Boeckman Road
Wilsonville, OR 97070-7777
Phone: 503.685.7000
Fax: 503.685.1204
Sales and Product Information
Phone: 800.547.3000
sales_info@mentor.com

Silicon Valley
Mentor Graphics Corporation
46871 Bayside Parkway
Fremont, California 94538 USA
Phone: 510.354.7400
Fax: 510.354.7467
North American Support Center
Phone: 800.547.4303

Europe
Mentor Graphics
Deutschland GmbH
Arnulfstrasse 201
80634 Munchen
Germany
Phone: +49.89.57096.0
Fax: +49.89.57096.400

Pacific Rim
Mentor Graphics (Taiwan)
11F, No. 120, Section 2
Gongdao 5th Road
HsinChu City 300
Taiwan, R.O.C.
Phone: 886.3.513.1000
Fax: 886.3.573.4734

Japan
Mentor Graphics Japan Co., Ltd.
Gotenyama Trust Tower
7-35, Kita-Shinagawa 4-chome
Shinagawa-Ku, Tokyo
Japan 140-0001
Phone: +81.3.5488.3033
Fax: +81.3.5488.3021

Mentor[®]
A Siemens Business