

Simcenter FLOEFD™ Release Highlights

Software Version 2020.1.0

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Introduction

This document provides a high-level summary of this release. It includes a summary of the new features in this release, any authorization code changes required, any major installation changes, and any transitioning issues you should be aware of before installing. Additionally, any last minute issues found in the final stages of testing are included.

New Features

The following new features are available in this release.

- **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 condition) 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 second 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.

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- **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 Scene template or Scene Image (*.efdsScene).
 - **Improvement of setting the Custom Visualization parameters.** User-defined postprocessing parameters can now depend on other user-defined postprocessing 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.
 - **Rebranding FloEFD.** FloEFD is now renamed to **Simcenter FLOEFD™ software**. FloEFDView is renamed to **Simcenter FLOEFD Viewer**. FLOEFD icon in Start menu is now located into **Simcenter FLOEFD** folder. The default files location in the Program Files folder is not changed, so API scripts referring to the setup folder are not affected.
 - **Simcenter FLOEFD BCI-ROM and Package Creator** module. The module includes the following capabilities:
 - BCI-ROM and Thermal Netlist
 - Package Creator
 - PCB compact model (previously available only in the Electronics Cooling module).
 - **Simcenter FLOEFD Electronics Cooling Center (ECC)** module. The module includes the following best in class capabilities for powerful and comprehensive electronics cooling analysis from Simcenter FLOEFD and Simcenter Flotherm™ software:
 - EDA Bridge and Smart PCB
 - BCI ROM and Thermal Netlist
 - Package Creator
 - PDML Import

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- Network Assembly and Two-resistor compact models
 - Simcenter T3STER™ software AutoCalibration
 - PCB compact model
 - Heat Pipe compact model
 - Joule Heating
 - Electrical Element compact model

All existing modules whose functionality is available in ECC module (EDA Bridge, AutoCalibration, Electronics Cooling, and Power Electrification) are maintained as separate modules.

For a detailed list of new features, refer to your product specific release notes manual or README file, available in the installed software tree or on Support Center.

Licensing

This release uses the Mentor Standard Licensing v2019_3. v2019_3 requires a FLEXnet license server running at version v11.16.4 or higher. If you use floating licenses, you will need to update the license server accordingly. Download the latest licensing software from Support Center. Alternatively license server is available from product installation.

Authorization Codes

No changes to authorization codes are required for this release. You may request your existing authorization codes by opening a non-technical Service Request on Support Center.

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For additional information on licensing, refer to the *Licensing Mentor Graphics Software* manual.

Supported Platforms

- Microsoft Windows 7 Professional, Ultimate or Enterprise 64-bit edition, Microsoft Windows 10 Pro or Enterprise 64-bit (tested with v1809)
- For solver: Microsoft Windows 2012 Server x64, Windows 2012 Server R2 x64, Linux RHEL 6.6, RHEL 7.3, Windows Server 2016, Windows Server 2016 with HPC Pack 2016, Linux SUSE SLES 11 SP3, SUSE SLES 12 SP0
- Microsoft Office 2013, Microsoft Office 2010, Microsoft Office 2007
- Microsoft Windows Media Player 7.0 or higher
- Ethernet network adapter
- Mouse or other pointing device

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- DVD-ROM drive
 - 4 GB RAM minimum, more recommended
 - 6 GB of free hard disk space, more required for simulation models
 - Localized languages: French, German, Japanese, Korean, Turkish, Chinese, Russian

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