

Technical Specification

1 January 2011

Frontend Module

- For functionality and CAD/EDA import filter, see technical specifications of the CST STUDIO SUITE(tm)

Mechanics Solver

- Isotropic material properties
- Displacement boundary condition
- Traction boundary condition
- Thermal deformation
- Various Stress plots: Von Mises, Hydrostatic and Tensor components
- Strain plot including the visualization of the volumetric strain
- Displacement plot including a deformed mesh plot
- Export of deformed structure to CST MICROWAVE STUDIO®

Thermal Stationary Solver Module

- Automatic mesh generation
- Isotropic and anisotropic material properties
- Bioheat material properties
- Boundary conditions: isothermal with fixed or floating temperature, adiabatic (no thermal fluxes), open
- Source types: fixed and floating temperatures, heat sources, loss- and current-fields from an electromagnetic simulation performed by CST EM STUDIO®, CST PARTICLE STUDIO® or CST MICROWAVE STUDIO®
- Tangential heat flux (insulating) / normal heat flux (with fixed or floating temperature) / open boundary-conditions
- Heat transfer by convection and radiation through surfaces
- Convection for human voxel models
- Heat transfer by conduction in volumes

Thermal Transient Solver Module

- Automatic mesh generation
- Isotropic and anisotropic material properties

- Bioheat material Properties
- Boundary conditions: isothermal with fixed or floating temperature, adiabatic (no thermal fluxes), open
- Sources: fixed and floating temperatures, heat sources, eddy current and stationary current loss fields, volume/surface power loss distributions in dielectric or lossy metal materials imported from CST MICROWAVE STUDIO®, crashed particle loss distribution from CST PARTICLE STUDIO®
- Tangential heat flux (insulating) / normal heat flux (with fixed or floating temperature) / open boundary-conditions
- Heat transfer by conduction in volumes
- Convection for human voxel models
- Heat transfer by convection through surfaces

Post Processing

- 2D and 3D field visualization
- Integration and visualization of fields along arbitrary paths
- Advanced reporting facilities
- Multiple 1D result view support
- Online visualization of intermediate results during simulation
- Import and visualization of external xy-data
- Copy / paste of xy-datasets
- Fast access to parametric data via interactive tuning sliders

Automation

- Fully parametric 3D modelling
- VBA compatible macro language
- Automatic macro recording
- OLE automation server
- Template based postprocessing
- Automatic, multi-dimensional parameter sweeps
- Automatic structure optimization for arbitrary goals using built-in optimizer

Documentation

- CST STUDIO SUITE™ - Getting Started
- CST MPHYSICS STUDIO® - Workflow and Solver Overview
- Online Help System, including step-by-step tutorials

Minimum Hardware Requirements

- Intel® Xeon® based PC, 1GB RAM, DVD- Drive, at least 16GB of free hard disc space.
- Fully OpenGL compliant graphic card



- Windows XP Professional, Windows Vista, Windows 7
- All solvers support RedHat Enterprise Linux (RHEL) 4.x und 5.x.
- Hardware recommendation depends on your application. If in doubt, please contact your local sales office for further information.

Minimum Hardware Requirements

- Intel® Xeon® based PC, 4GB RAM, DVD-Drive, at least 20 GB of free hard disc space.
- Fully OpenGL compliant graphic card
- Windows XP Professional, Windows Vista, Windows 7
- All solvers support RedHat Enterprise Linux (RHEL) 4.x und 5.x.
- Hardware recommendation depends on your application. If in doubt, please contact your local sales office for further information.

General

- CST MPHYSICS STUDIO® is a configurable tool with a choice of options. Please contact your local sales office for further information.