

# Femap Version 11.4.2

## Improving productivity and functionality for finite element analysts

### Benefits

- Improved workflows and ease-of-use
- Extended range of simulation applications
- Faster and more responsive solutions

### Features

- Updated and contemporary graphical user interface
- New solver functionality
- Distributed computing to enable parallel solving

### Summary

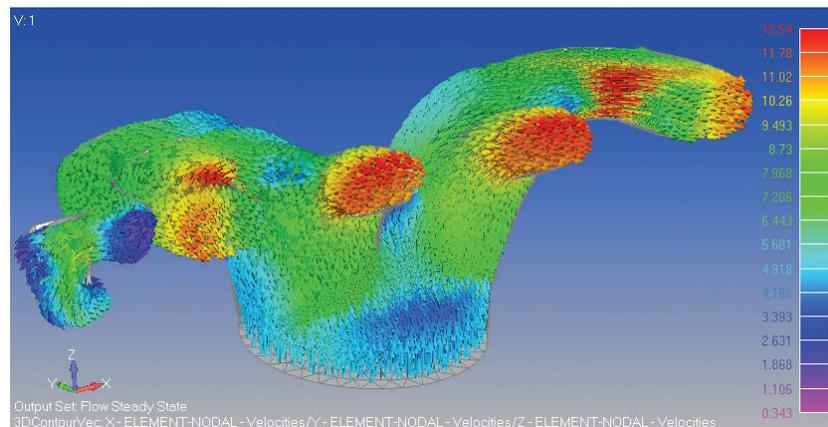
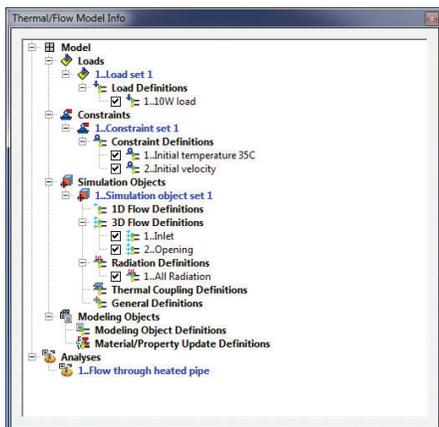
Femap™ software version 11.4.2 is the latest release of the standalone finite element modeling pre- and postprocessor for engineering simulation and analysis. Femap is computer-aided design (CAD) independent and can import geometry from all major CAD platforms and supports most CAD formats. Femap also works in combination with a wide variety of finite element analysis solvers, including the industry-leading NX™ Nastran® software.

Femap 11.4.2, part of the Simcenter™ solutions, provides a number of enhancements and updates to the

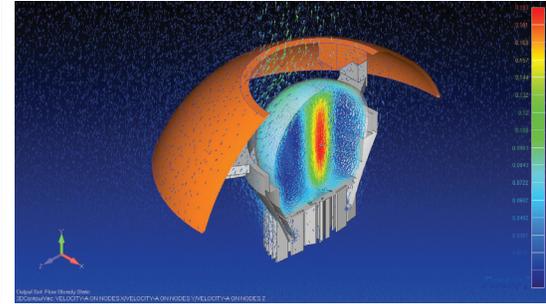
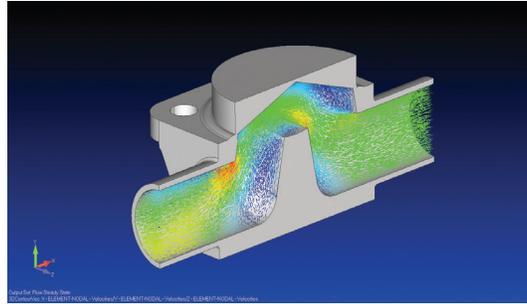
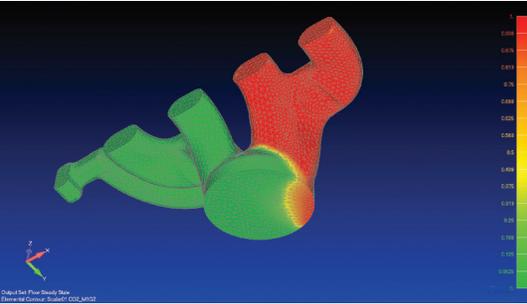
Femap Thermal Solver, Advanced Thermal Solver and Flow Solver capabilities.

### Contemporary graphical user interface

- Dedicated Thermal/Flow Model Info pane, analogous to FEMAP Model Info pane
- Create loads, constraints and other simulation entities by right-clicking in Thermal/Flow Model Info panel
- Thermal/Flow analysis solution set up analogous to NX Nastran analysis, accessed by right-clicking on Analyses node



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- Persistent navigator objects for loads, constraints and other simulation entities
- Highlighting and display symbol support

## Enhanced thermal/flow solver functionality

- Femap – Simcenter 3D thermal and flow solver synchronization
- Benefit from latest core solver enhancements

## Thermal solver highlights

- Parallelized solver
- Improved adaptive time stepping
- Enhanced thermal couplings
- Initial conditions from dissimilar meshes
- Thermostat and active heater controller reports

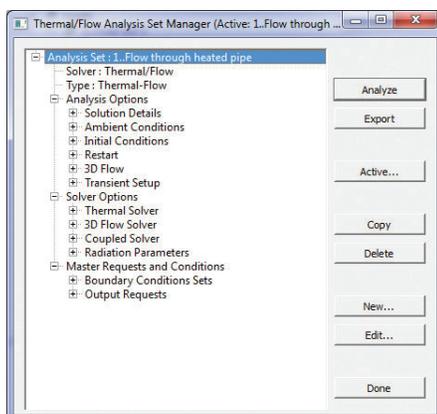
- Enhanced transient end time options
- Hydraulic network enhancements
  - Improved duct flow advection scheme
  - Duct-to-3D-CFD connections
  - Total temperature calculations
- Enhanced Orbit Visualizer
  - Preview orbit, spacecraft orientation, and calculation points
  - Rich set of visualization options
- Expanded output options for simulation results

## Flow solver highlights

- Parallelized solver
- Extended two-equation turbulence models
- Large Eddy Simulation (LES) turbulence model
- Fractional step scheme
- Enhanced second-order discretization schemes
- Enhanced freeze-flow and restart options
- Static pressure and convective outflow boundary conditions
- New capabilities
  - Homogenous gas mixtures
  - Immiscible fluid mixtures
- Expanded output options for simulation results
- Enhanced CGNS export

## Parallel processing enhancements

- Parallel processing extended to entire solution sequence for thermal and flow runs
- Distributed Memory Parallelization (DMP) of solvers means separate access to both CPU and RAM
- Execute up to eight processes on a compute node with Advanced Thermal and Flow licenses at no extra cost



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