# SIMULIA ExSight

Provides a realistic finite element analysis environment for simulation experts within the powerful V6 environment.

Overview

ExSight is the next generation finite element and multiphysics analysis solution from SIMULIA, the Dassault Systèmes brand for Realistic Simulation. ExSight takes advantage of the V6 platform which enables global, collaborative innovation by allowing all users to leverage a single database to drive design decisions and improve product performance. Features such as user status, immersive chat, and snapshot views facilitate efficient communication between users for achieving the optimal design.

ExSight enables engineering analysts to set up a wide range of complex, real-world simulations through world-class finite element model building, meshing, scenario definition and results visualization tools, while maintaining full CAD associativity.
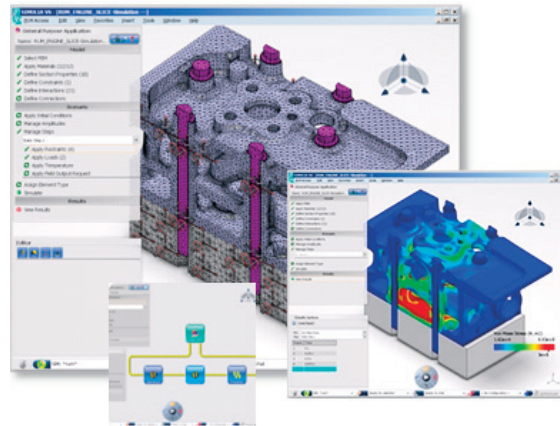
ExSight includes model definition tools which allow users to apply material, generate mesh, define steps, loads, boundary conditions, etc.

Features & Benefits

- Define simulations using efficient tools for modeling, scenario definition and visualization of simulation results.

- Configure interface and capabilities for user type or target workflows such as vertical applications.

- Provide pre- and postprocessing functionality for nonlinear simulation on the V6 platform with CAD associativity and efficient tools for collaboration.

- Setup simulations for requirements driven design and manage simulations through V6 PLM for full traceability.

- Enable rapid turnaround time of large models using high-performance computing resources to permit more design simulation runs.

- Enable interrogation of realistic simulation results with speed, clarity and control on the desktop for enhanced decision making.

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ExSight Highlights

Simulate products virtually through realistic multiphysics conditions

ExSight provides capabilities for setting up and running nonlinear simulations using high-performance computing within an easy-to-use interface on the V6 platform. ExSight uses Abaqus FEA technology to provide solutions that analysts can trust.

Meshing

ExSight uses FEM mesh representations generated automatically or by using the extensive tools in the Advanced Meshing Workbench. Multiple mesh representations can be generated and used for various types of simulations. The mesh is fully associated with the geometry and can be easily updated following geometric modifications and without the need for recreation of analysis attributes.

Materials and Sections

ExSight allows for materials to be defined for simulations and stored within the environment for future use. Convenient search and management tools make it easy to obtain the correct material properties and apply them to the model. Material definitions can be imported from external files such as 3DXML, FBDI and the Abaqus input (*.inp) file. Available material models for simulation include elastic, plastic and hyperelastic.

Stress and Natural Frequency Simulation

Multi-step, nonlinear static simulations can be setup in ExSight. Additionally, frequency simulations can be defined to calculate the natural frequencies of the model. For each simulation step, attributes can be defined and user control is available for customizing the analysis parameters.

Loads, Restraints, and Initial Conditions

ExSight provides several load and restraint tools for creating realistic simulation scenarios. Available structural loads include pressure, force and torque, which can be applied to any surfaces in the model. Available restraints include a general displacement restraint, clamp and a grounded ball joint to enable a surface to rotate freely. Loads and restraints can be created and modified in different steps of the simulation using convenient review panels.
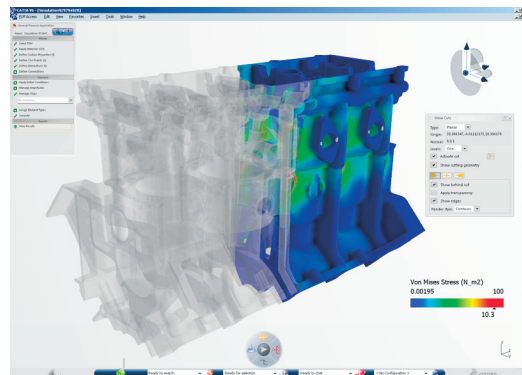
Results Visualization

ExSight provides several tools for visualization of simulation results display. These include undeformed and deformed display, contouring, symbol plot and probing. Extreme values can be visualized along with results at different locations using an interactive probe. Display groups enable results display to be limited to a subset of the model for closer inspection of the results. Flexible view cuts can be used to cutaway a part of the model from display for display of results on the interior.
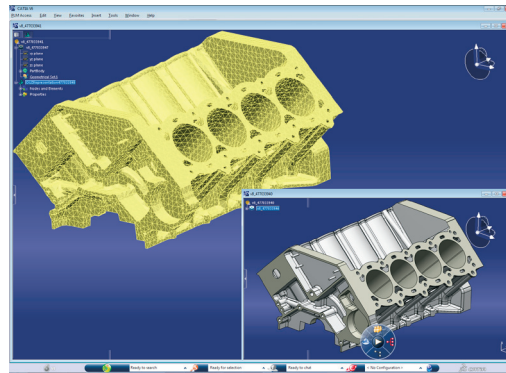
Powerful meshing capabilities in ExSight enable high quality meshes to be generated efficiently for complex parts.

ExSight provides the analyst with an extensive set of tools to set-up simulation models in a refined, immersive and integrated user interface.

Powerful and high-performance results visualization capabilities provide the end-user with best-in-class experience for results post-processing and decision making.

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