

# SIMULIA

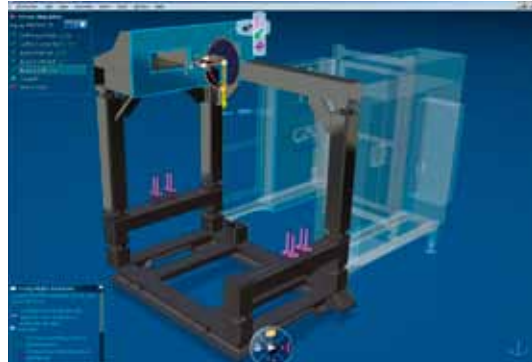
## DesignSight Structure Plus (DSP)

Enables up-front realistic simulation of product assemblies under structural loading conditions

### Overview

New in V6R2011, SIMULIA DesignSight Structure Plus builds on DesignSight Structure to enable up-front realistic structural simulation of product assemblies. A seamless extension of CATIA V6 product design, DesignSight Structure Plus represents another important step in enabling realistic simulation to be performed in the V6 environment. It incorporates proven Abaqus technology with unprecedented ease of use.

DesignSight is for occasional users of simulation who have limited training in FEA. With DesignSight the user is guided through the process of performing a simulation. ExSight, on the other hand, is an expert level product. It allows the user full access to all the expert analysis tools. CATIA Analysis works as a hybrid of DesignSight and ExSight. It is a tool developed for designer analysis, however it contains analyst capabilities similar to ExSight, and the user experience is not guided.



*DesignSight Structure Plus guides the user through a series of actions to prepare the model, run the simulation, and view the results. The user interacts directly with the design to define load location, orientation, and magnitude, and other simulation specifications.*

### Features & Benefits

- Extend DesignSight Structure with the addition of assembly simulation capabilities and additional modeling tools
- Simulate realistic behavior under structural loading conditions
- Stress and natural frequency simulation methods are available
- Leverage proven Abaqus FEA technology
- High performance on multi-core workstations
- Run on remote HPC clusters when Abaqus tokens are available
- Automatically generates the right mesh with adaptive refinement
- Based on the new V6 lifelike user experience
- Provide guidance at all times to help the user understand what to do next
- Natural extension of the design experience
- Advanced simulation technology with an easy-to-use interface

# DSP Highlights

## Fosters creativity through up-front simulation

DesignSight is a natural extension of the design experience in V6, enabling users to study their design's behavior and to explore different design options. DesignSight is designed to be easy to use and includes functionality required to simulate the complexities of real-world behavior.

## Enables occasional users of simulation to simulate their models under realistic loading conditions

The user experience reduces the need to understand analysis technology. Advanced analysis technology is handled automatically, while the options presented to the user are intuitive and explained in the language of designers. For example, nonlinear analysis is performed automatically so that the user does not need to choose between linear and nonlinear. Another example is that the finite element mesh is created and adaptively refined automatically to ensure high-quality results for each simulation. To make the user experience even more appealing, users receive continuous guidance regarding where they are in the simulation process and what they need to do next, so that they are never lost.

## Simulations automatically managed through V6 PLM

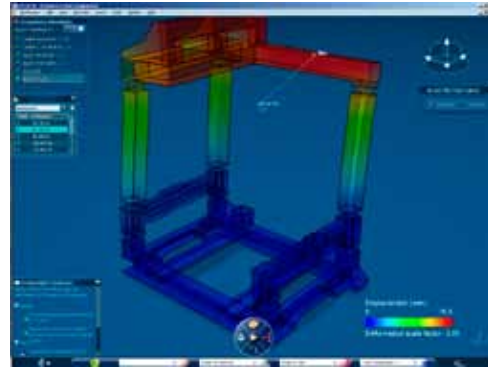
DesignSight leverages the values and benefits of V6 PLM. In particular, DesignSight provides a 3D lifelike experience, in which the user interacts directly with the 3D model with minimal reliance on icons and dialog boxes. V6 PLM manages all aspects of design, from part design to product assembly and through to simulation attributes and results.

## Provides high-quality results using the latest Abaqus FEA technology

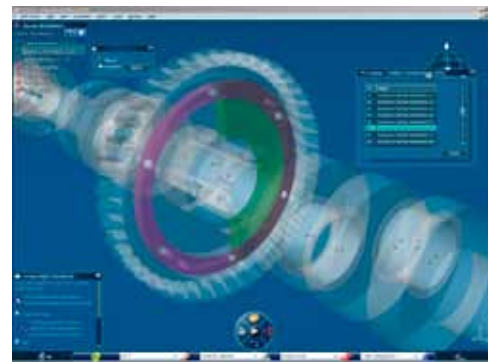
DesignSight uses the same, proven Abaqus FEA technology providing reliable results backed by more than 30 years of research and development. Abaqus technology is based on the most accurate and robust analysis mathematics. Industrial R&D and academic researchers have long considered Abaqus FEA a premier tool to help solve some of the most vexing engineering and design problems. DesignSight makes this state-of-the-art technology more accessible than ever before.

## Rapid turnaround time of large models using high performance computing resources to enable more design iterations

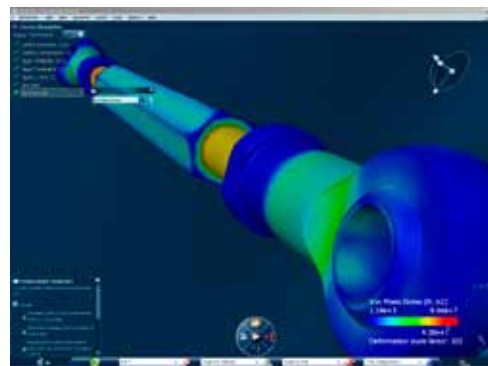
DesignSight includes cutting-edge computation technology to utilize the power of modern multi-core workstations to obtain simulation results quickly. Users with access to a compute cluster and Abaqus tokens can seamlessly run simulations on the cluster and use up to 128 cores or more for rapid turnaround times of large models.



*DesignSight Structure Plus calculates the natural frequencies of assemblies such as this frame structure, which is composed of several individual parts joined together.*



*The automatic connection option quickly finds all contacting surfaces and bonds them together, treating them as one body. Automatic bonding is very effective for models such as this crank shaft of an industrial cutting machine, which is composed of many parts bolted together and firmly connected by other means.*



*DesignSight Structure Plus uses high-performance computing technology to perform stress simulations rapidly on assemblies containing anywhere from a few to a large number of parts. This turnbuckle assembly experiences high bending and torsion stresses due to the applied twisting load.*

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