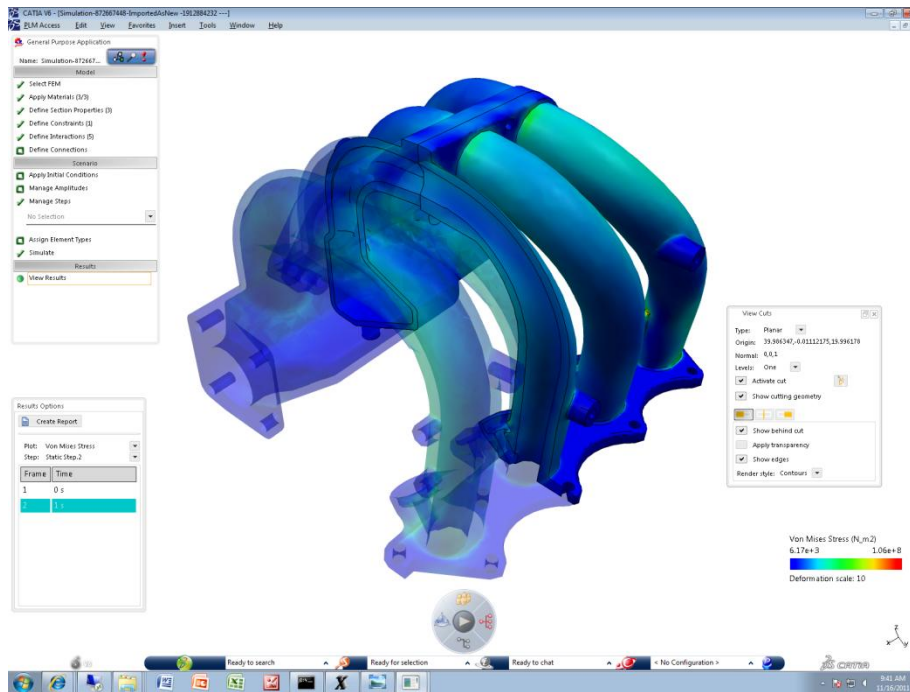


# DS SIMULIA V6R2012x - FACT SHEET

*Improve product quality and efficiency with Realistic Simulation and Simulation Lifecycle Management Solutions*



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## **INTRODUCTION**

The V6R2012x release includes enhancements to the SIMULIA DesignSight and Simulation Lifecycle Management (SLM) product families as well as the CATIA V6 Analysis product portfolio. In this release, SIMULIA also introduces ExSight, an expert-level product family that is being developed to provide robust and advanced finite element analysis and multiphysics capabilities in the V6 environment. The ExSight V62012x release includes, Multiphysics Model, Scenario & Results (MSK) which provides the core capabilities required by experts for meshing, property definition, multiphysics scenario definition, and results visualization of linear and nonlinear analysis. SIMULIA ExSight product family will be further enhanced in future releases to leverage continued advancement in Abaqus FEA technology so that analysis experts can further explore, understand and improve product performance

By implementing simulation early in the design process designers improve productivity, quality and product performance. The design products offer two different approaches to Finite Element Analysis (FEA) to suit the needs of all users. Designers can take advantage of traditional FEA capabilities using CATIA V6 Analysis, or begin to leverage significant ease-of-use benefits from DesignSight, incorporating robust technology from Abaqus FEA. SLM enables design teams and decision makers to capture, deploy and enforce company specific simulation best practices throughout the enterprise for collaborative decision making.

## **SIMULIA V6 VALUE AT A GLANCE**

The SIMULIA portfolio provides powerful tools that enable designers and engineering analysts to perform fast, accurate performance studies on parts, components, and products in the V6 environment.

- Realistic Simulation is an essential part of the DS V6 strategy.
- Making simulation an integral business process is a key goal of SIMULIA V6.
- SIMULIA provides realistic simulation solutions to evaluate accurate product performance during the design process.
- SIMULIA's V6 solutions for realistic simulation and simulation lifecycle management enable designers and engineers to collaborate on complying with performance metrics.
- SIMULIA leverages the V6 platform to allow users to manage and secure Simulation IP.

## **SIMULIA V6R2012x ENHANCEMENTS**

### **NEW! SIMULIA ExSight Product Family**

- Advanced modeling, scenario authoring and results visualization for multidisciplinary FEA simulation.
- Leverages sophisticated Abaqus analysis capabilities for complex scenario definition.
- Efficient model setup (setting up the 3D model, applying meshes and loading conditions, etc.) and handling of large assemblies.
- Flexible to deliver various Industry vertical solutions.

## **SIMULIA DesignSight Product Family**

- The new hyperelastic material model enables accurate simulation of rubber materials, even at very high strains.
- Gravity loads can now be simulated, permitting realistic deformations of models including heavy components.
- Cut-plane results post-processing enables users to easily view results inside the model.
- Users can intuitively align and position loads based on existing geometry such as existing edges, axes, and coordinate systems making it easier to achieve precise load alignment.

## **SIMULIA Simulation Lifecycle Management Product Family**

*(SLM products are CA in V6R2012x)*

- Provides a more seamless user experience with improved data sharing capabilities between the workspace folders where reference data is stored and the process flows consuming it.
- The PLM behavior of the application has been enhanced to better manage owned data.
- The attribute group functionality is now available for documents created during the course of the execution of process flows.
- The MDL user interface has been improved in R2012x, enabling users to have better control over External Simulation Representation (X-Rep) creation, link editing, and 3D graphical display of geometry and X-Reps.

## **SIMULIA V6 OVERVIEW**

SIMULIA enables collaboration on performing virtual tests and meeting performance requirements. Its portfolio provides powerful tools that enable fast, accurate performance studies on parts, assemblies, components, and products in V6. It also enables organizations to capture their simulation knowledge, deploy approved methods, manage applications, and share simulation results to enable collaboration and accurate performance-based decisions.

**Global Collaborative Innovation:** Simulation results are accessible throughout the enterprise to drive design performance and make product-related decisions. Since simulation is often performed by specialist teams, the ability for diverse, globally distributed product teams to directly collaborate on simulation results within an integral product portfolio is highly beneficial. Social presence features such as user status, immersive chat, and snapshot views facilitate easier and quicker communication between both designer and analyst when determining the optimal design structure.

**Online Creation and Collaboration:** The online nature of V6 applies to simulation users by offering real-time, online access to simulation models and results. Models can be accessed anywhere at any time and shared within teams.

**Single PLM platform for Intellectual Property (IP) Management:** On a single platform, users can manage and secure simulation-generated IP within a shared global knowledge base. V6 extends the concept of PLM from the management of product information to the management of simulation data, tools and processes. The single platform is as important for making simulation information easily accessible across the enterprise as it is for product data. Ultimately, it allows simulation IP to be captured, automated, mined, reported and otherwise leveraged.

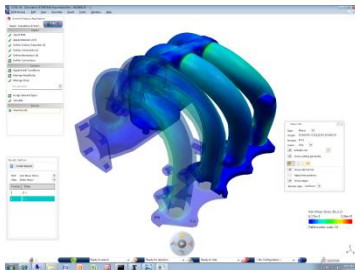
**Ready to Use PLM Business Processes:** A key part of making simulation an integral business process involves developing and deploying standard simulation processes, managing those processes within SIMULIA Scenario Definition as templates, and then ensuring those processes are used consistently across the enterprise.

**Lifelike Experience:** SIMULIA V6 lets users experience physically realistic 3D product behavior to accurately predict the behavior of a product under real world conditions. The deeper insight into product behavior that simulation provides not only allows a reduction in expensive and time consuming physical tests, but also increases confidence in the design.

**Lower Total Cost of Ownership (TCO) – Breakthrough ROI:** SIMULIA V6 enables customers to maximize product profitability by fully leveraging realistic simulation in all phases of design. The scalable solutions enable companies to consolidate their simulation applications within V6 and leverage existing computing resources for distributed, high performance computing.

## SIMULIA & CATIA ANALYSIS V6R2012x PRODUCTS

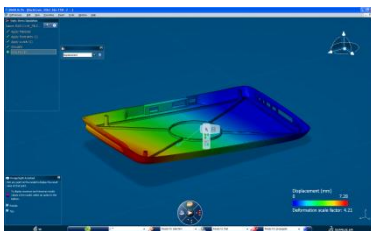
### SIMULIA ExSight Product Portfolio



#### **Multiphysics Model, Scenario & Results:**

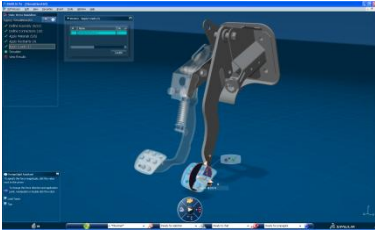
Multiphysics Model, Scenario & Results offers fundamental capabilities for setting up and running simulations. It includes tools for material simulation domain definition, parts assembly with engineering connections, mesh generation, definition of model attributes and scenario for structural analysis and simulations results visualization. ExSight brings powerful Abaqus-based FEA analysis fully integrated on top of the V6 PLM powerful platform.

### SIMULIA DesignSight Product Portfolio



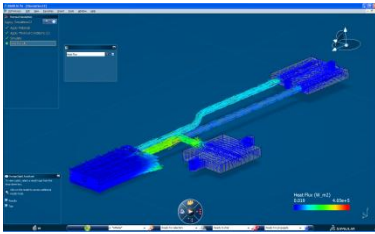
#### **DesignSight Structure:**

DesignSight Structure is the first in a family of DesignSight simulation products to enable occasional users of simulation to model the complexities of real-world scenarios. The DesignSight Structure product leverages proven Abaqus FEA technology to model and simulate the realistic behavior of single parts under a variety of loading conditions with the goal of providing insights to help designers improve their designs.



### DesignSight Structure Plus:

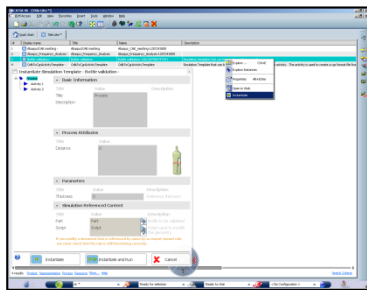
DesignSight Structure Plus builds on DesignSight Structure to enable up-front realistic structural simulation of product assemblies. A seamless extension of CATIA V6 product design, DesignSight Structure Plus represents another important step in enabling realistic simulation to be performed in the V6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



### DesignSight Thermal:

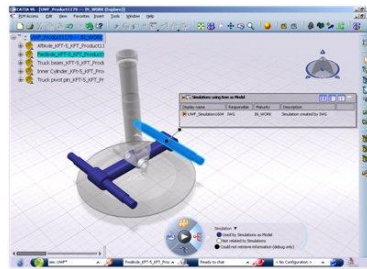
DesignSight Thermal extends the family of DesignSight simulation products to enable occasional users of simulation to model the complexities of real-world thermal scenarios. The product models single parts under a variety of thermal loading conditions with the goal of providing insights to help designers improve their designs.

## SIMULIA Simulation Lifecycle Management (SLM) Product Portfolio



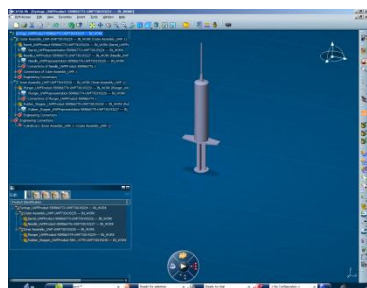
### Scenario Definition:

Scenario Definition, built on the ENOVIA V6 infrastructure, accelerates product development by providing timely access to the right information through secure storage, search, and retrieval with distinct functionality dedicated specifically to simulation processes and data. It maximizes the value of company-generated simulation IP through the capture, re-use, and deployment of simulation best practices for collaborative product development.



### Live Simulation Review:

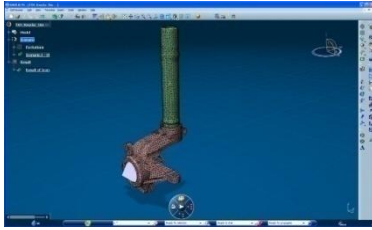
Live Simulation Review is an extension of 3DLive's capabilities for 3D search and navigation with simulation focused functionality such as the ability to identify and navigate to all simulations performed on a given part or assembly. It empowers collaborators to access simulation data, instantiate simulation templates, execute simulations, and review simulation results for collaborative decision making during the product development process.



### Model Editor:

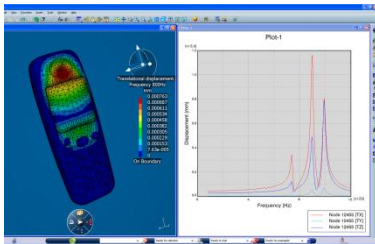
Model Editor enables the creation and managing of V6 product structure representations targeted at containing 3<sup>rd</sup> party simulation data. SIMULIA Model Editor, used in conjunction with ENOVIA Designer Workspace (DWS), enables designers and analysts to work concurrently in a collaborative, managed, open environment with the simulation modeling tools of their choosing.

## CATIA Analysis Product Portfolio



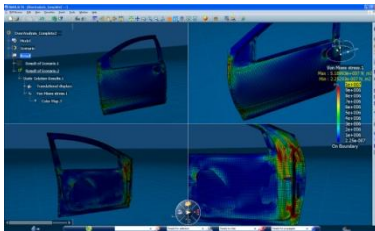
### **Structural Analysis:**

Structural Analysis allows design-analysis iterations to be performed rapidly by designers working within the CATIA design environment. It enables linear stress and modal analysis on part and hybrid assemblies, as well as powerful stress and vibration analysis on complex assemblies, including surfaces, solids, and wireframe geometries.



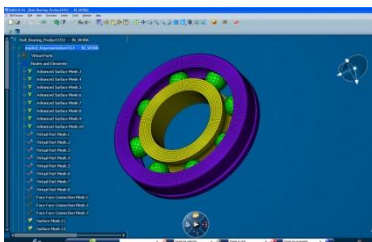
### **Advanced Structural Analysis:**

Advanced Structural Analysis enables advanced stress, modal and linear dynamic analysis on any type of part or hybrid assembly. Capabilities include the full postprocessing analysis on composites parts with embedded failure criteria specification to the creation and simultaneous solving of multiple analysis cases for static, frequency, and buckling analysis, as well as advanced loading.



### **Surface FE Modeling:**

Surface FE Modeling provides a meshing capability for surface parts and wireframe geometries and defines the associated properties (thicknesses, material, beam section, etc.). The solution, based on a powerful topological engine, supports creating finite element models with assembly joints and other fasteners, including spot seam and surface welds. It also provides tools to analyze mesh quality according to pre-defined and customizable criteria. SFE provides the capability to completely generate 1D & 2D FE models ready for boundary condition definition.



### **Advanced FE Modeling:**

Advanced FE Modeling enables automatic and associative meshing as well as manual mesh creation on surfaces and complex solid parts. Thanks to its unique topology simplification and access to advanced mesh parameters you can enable high-quality meshing.