SIMULIA V6R2013x – Fact Sheet

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

Tale of contents

INTRODUCTION

The V6R2013x release includes enhancements to the SIMULIA DesignSight, ExSight and Simulation Lifecycle Management (SLM) product families as well as the CATIA V6 Analysis product portfolio.

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 GALNCE

The SIMULIA portfolio provides powerful tools that enable designers and engineering analysts to perform fast, accurate performance studies on parts, components, assemblies 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 V6R2013x ENHANCEMENTS

SIMULIA ExSight Product Family

- New modeling and visualization capabilities.
- Beam elements, are now supported and allow users to define their own beam profiles.
- Continuum shells allow for easier and better modeling of composites structures.
- Gaskets are now available, notably for powertrain analyses.

- Additional procedures have been added, including mode-based linear dynamics, usually for noise and vibration applications, and buckling, for analysis of unstable structures.
- Results visualization has been enhanced to leverage remote computing resources for higher performance, with the ability to display the surrounding assembly to a set of simulation results.

SIMULIA DesignSight Product Family

- DesignSight now offers realistic thermal and structural contact interactions with an easy-to-use user interface, enabling users to understand how parts influence each other within an assembly.
- Several new loads and restraints, such as centrifugal force, convection loading (when thermal stress is caused by coming in contact with another part at a different temperature), and restraints around and along any XYZ axis.

SIMULIA Simulation Lifecycle Management Product Family

- Streamline the product development process thanks to further integration of simulation with the rest of the enterprise solution.
- Better support of ENOVIA Engineering, Designer and Requirement Central data allows for an even more seamless product development process. For example, values defined in Requirement Central can directly be used in simulation workflows.
- Dedicated search tools for retrieving simulation data based on simulation related classification are now exposed to all V6 users, ensuring any user can find the simulation data they need.
- SLM also continues to provide new functionality for advanced users, including the support of array (or multi-valued) attributes, improved execution communication and flexible simulation job log configuration for administrators.

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.

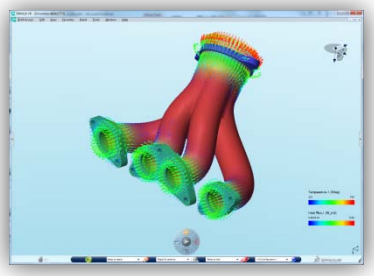
Ready to Use PLM Business Processes: A key part of making simulation an integral business process involves developing and deploying standard simulation processes, managing those processes within SIMULIA Scenario Definition as templates, and then ensuring those processes are used consistently across the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

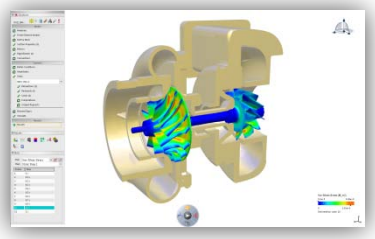
Lower Total Cost of Ownership (TCO) – Breakthrough ROI: SIMULIA V6 enables customers to maximize product profitability by fully leveraging realistic simulation in all phases of design. The scalable solutions enable companies to consolidate their simulation applications within V6 and leverage existing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

SIMULIA & CAITA ANALYSIS V6R2013x PRODUCTS

SIMULIA ExSight Product Family

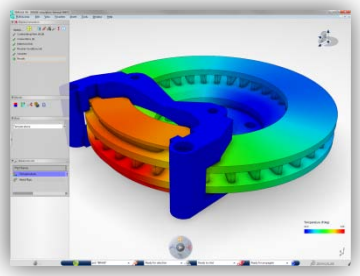


ExSight Multiphysics Pack:
ExSight Multiphysics Pack is part of SIMULIA's ExSight product family, which together with the DesignSight and Simulation Lifecycle Management families constitutes a comprehensive product portfolio for realistic simulation built on the Version 6 platform. ExSight is intended for simulation specialists and provides extensive capabilities for setting up and running simulations.

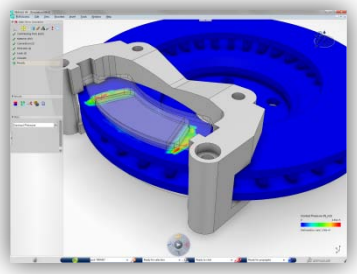


ExSight Multiphysics Extended Pack:
ExSight Multiphysics Extended Pack is an extension of the ExSight Multiphysics Pack and provides capabilities such as advanced mesh generation on solid and surface parts, import of composites section properties from CATIA Composites, and definition of automatic or surface based contact. Capabilities for buckling, harmonic response, implicit and explicit, transient dynamic simulation are also provided.

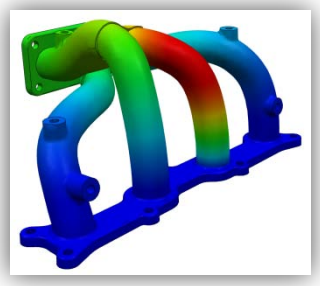
SIMULIA DesignSight Product Family



DesignSight Structure:
DesignSight Structure, enables occasional users of simulation to simulate the real-world structural behavior of product assemblies. DesignSight Structure leverages proven Abaqus Multiphysics technology to simulate the realistic behavior of products under a variety of mechanical loading conditions. By enabling realistic simulation earlier in the design cycle, DesignSight spurs product innovation, reduces time to market, and ensures product competitiveness.

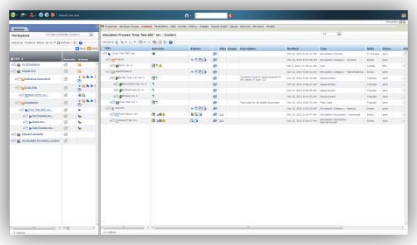


DesignSight Structure Plus:
DesignSight Structure Plus extends DesignSight Structure to enable additional physics and productivity tools. A seamless extension of the V6 product design experience, DSP enables users to explore aspects of their designs' behavior beyond what is possible with DesignSight Structure, such as natural frequency response and behavior considering large material strains. It incorporates proven Abaqus Multiphysics technology with unprecedented ease of use.

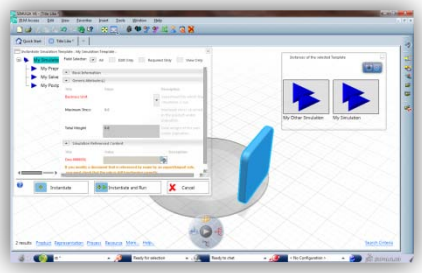


DesignSight Thermal:
DesignSight Thermal extends SIMULIA's family of DesignSight products to enable designers and design engineers to model real-world thermal behavior. The product simulates assemblies under a variety of thermal loading conditions with the goal of providing early insight into thermal performance, leading directly to better-engineered and more innovative products.

SIMULIA Simulation Lifecycle Management (SLM) Product Family



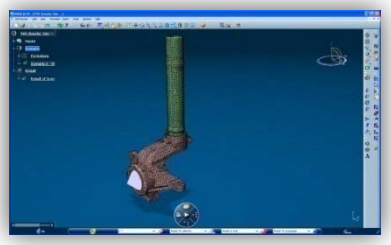
Scenario Definition:
Scenario Definition is part of SIMULIA's family of Simulation Lifecycle Management products and is built on the V6 platform. It maximizes the value of company-generated simulation Intellectual Property (IP) through the capture, re-use, and deployment of simulation data and best practices for collaborative product development. The simulation IP is fully secured, searchable, and lifecycle managed with full traceability.



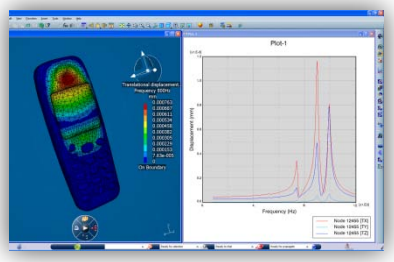
Live Simulation Review:
Live Simulation Review,is an extension of 3DLive's capabilities for 3D search and navigation with simulation focused functionality such as the ability to identify and navigate to all simulations performed on a given part or assembly. It empowers collaborators to access simulation 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 3rd 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.

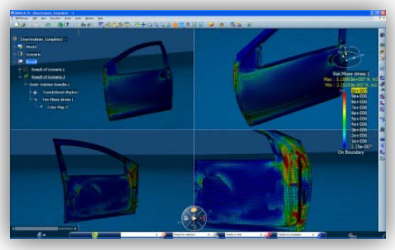
CATIA Analysis Product Family



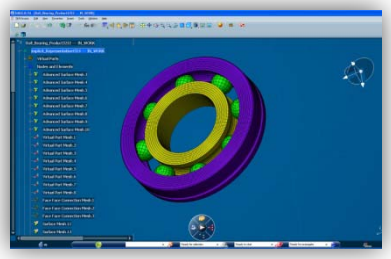
Structural Analysis:
Structural Analysis allows design-analysis iterations to be performed rapidly by designers working within the CATIA design environment. It enables linear stress and modal analysis on part and hybrid assemblies, as well as powerful stress and vibration analysis on complex assemblies,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