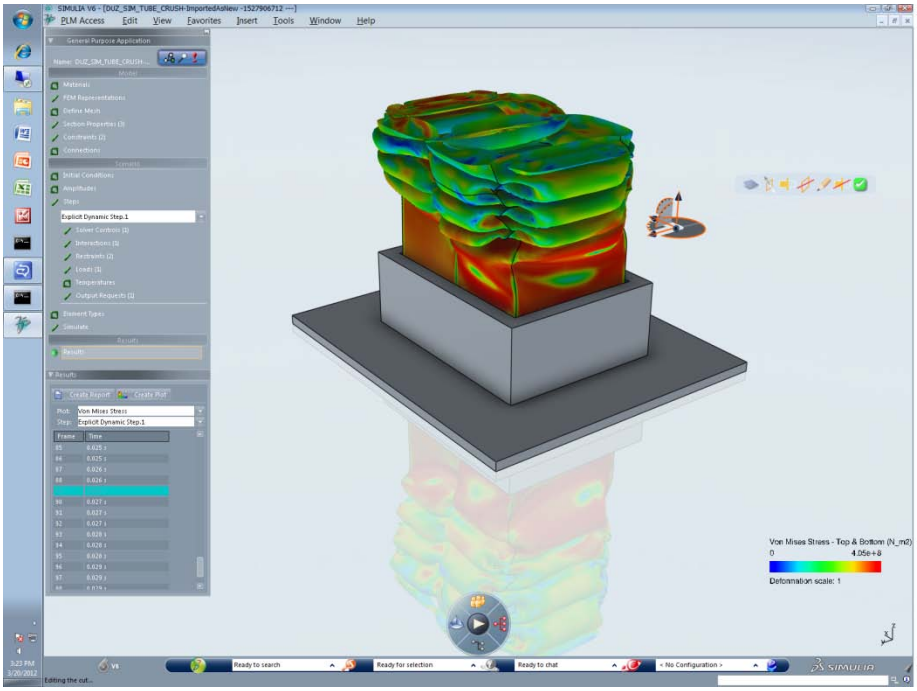
DS SIMULIA V6R2013 - FACT SHEET

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



INTRODUCTION

The V6R2013 release includes enhancements to the SIMULIA DesignSight, ExSight and Simulation Lifecycle Management (SLM) product families as well as the CATIA V6 Analysis product portfolio. In this release, SIMULIA also introduces ExSight Multiphysics Extended Pack, an expert-level product that is an extension of the ExSight Multiphysics Pack. ExSight Multiphysics Extended Pack is part of SIMULIA's ExSight product family, which together with the DesignSight and Simulation Lifecycle Management product 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 Abaqus and other multiphysics simulations. The 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 V6R2013 ENHANCEMENTS

SIMULIA ExSight Product Family

- Shell elements, important in aerospace applications, are now supported and allow users to vary thickness and other properties in different areas within the same model.
- Material properties for composites can now be imported from CATIA Composites Part Design (CPD) for efficient modeling and design updates of composite parts.
- High speed events and deformations such as mobile device drop tests can be simulated using automatic general contact, eliminating the need to manually pair contact surfaces.
- Numerous modeling enhancements including additional types of loads and restraints have been added, increasing the range of simulations that can evaluate the real world behavior of designs.

SIMULIA DesignSight Product Family

- The “digger” tool has been extended to evaluate results, enabling users to rapidly peel away exterior layers by clicking through the model.
- Users can now group and dock viewing panels within the application for a more organized working environment and better use of on-screen space.
- Report generation has been enhanced to allow users to select specific information they want to include and automatically create professionally presentable Word documents. This feature enables quick sharing of meaningful results to drive collaborative decision making.

SIMULIA Simulation Lifecycle Management Product Family
(SLM products are CA in V6R2013)

- Data retention capabilities allow users to eliminate unneeded files to save space and reduce data complexity.
- Users in multiple departments can now work collaboratively with the new task sign-off feature.
- A new “My Simulations” interface eases new user adoption of SLM by providing capabilities to create and run simulations.
- Product structures are now accessible through a filtered view, allowing users to easily share content, improving design collaboration.

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.

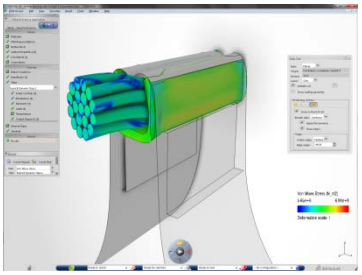
Ready to Use PLM Business Processes: A key part of making simulation an integral business process involves developing and deploying standard simulation processes, managing those processes within SIMULIA Scenario Definition as templates, and then ensuring those processes are used consistently across the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

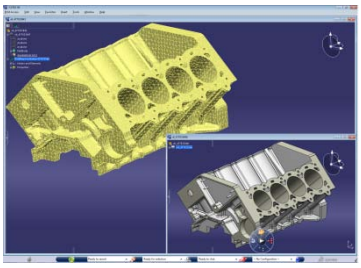
Lower Total Cost of Ownership (TCO) – Breakthrough ROI: SIMULIA V6 enables customers to maximize product profitability by fully leveraging realistic simulation in all phases of design. The scalable solutions enable companies to consolidate their simulation applications within V6 and leverage existing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

SIMULIA & CATIA ANALYSIS V6R2013 PRODUCTS

SIMULIA ExSight Product Suite

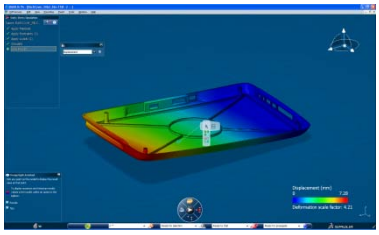


ExSight Multiphysics Pack:
ExSight Multiphysics Pack offers fundamental capabilities for setting up and running simulations. It includes tools for material simulation domain definition, parts assembly with engineering connections, mesh generation, definition of model attributes and scenario for structural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



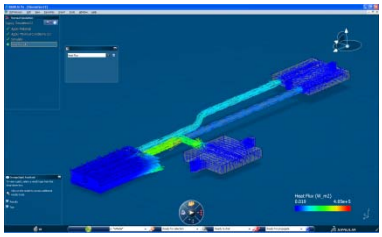
ExSight Multiphysics Extended Pack:
ExSight Multiphysics Extended Pack is an extension of the ExSight Multiphysics Pack and provides capabilities such as advanced mesh generation on solid and surface parts, import of composites section properties from CATIA Composites, and definition of automatic or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

SIMULIA DesignSight Product Suite



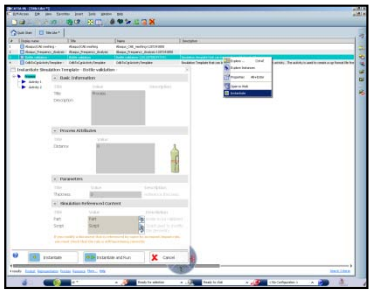
DesignSight Structure:
DesignSight Structure is the first in a family of DesignSight simulation products to enable occasional users of simulation to model the complexities of real-world scenarios. The DesignSight Structure product leverages proven Abaqus FEA technology to model and simulate the realistic 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.

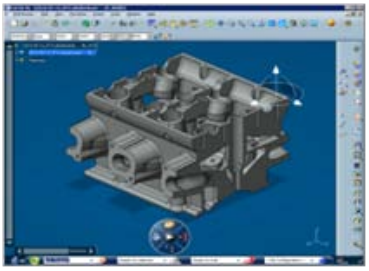


DesignSight Thermal:
DesignSight Thermal extends the family of DesignSight simulation products to enable occasional users of simulation to model the complexities of real-world thermal scenarios. The product models single parts under a variety of thermal loading conditions with the goal of providing insights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

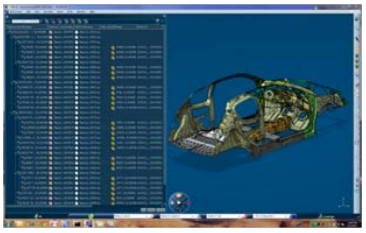
SIMULIA Simulation Lifecycle Management (SLM) Product Suite



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.

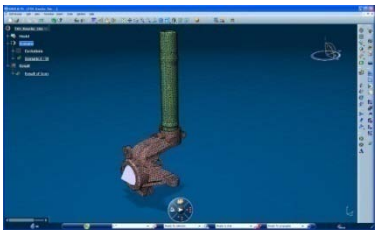


Live Simulation Review:
Live Simulation Review is an extension of 3DLive's capabilities for 3D search and navigation with simulation focused functionality such as the ability to identify and navigate to all simulations performed on a given part or assembly. It empowers collaborators to access simulation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

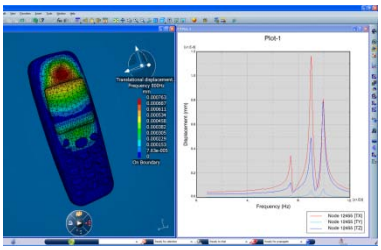


Model Editor:
Model Editor enables the creation and managing of V6 product structure representations targeted at containing 3rd party simulation data. SIMULIA Model Editor, used in conjunction with ENOVIA Designer Workspace (DWS), enables designers and analysts to work concurrently in a collaborative,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

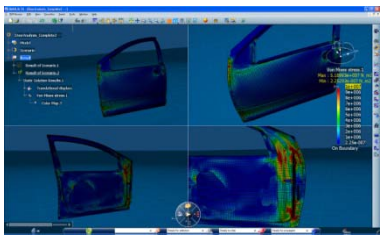
CATIA Analysis Product Suite



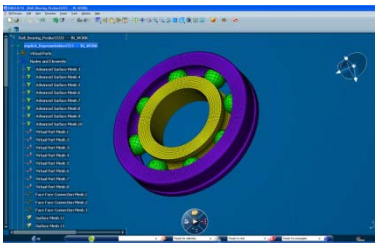
Structural Analysis:
Structural Analysis allows design-analysis iterations to be performed rapidly by designers working within the CATIA design environment. It enables linear stress and modal analysis on part and hybrid assemblies, as well as powerful stress and vibration analysis on complex assemblies,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