

SIMULIA SLM V6R2010

Collaborative environment captures and manages simulation intellectual property (IP) over the full lifecycle

The use of virtual simulation technologies has proven to be an effective way for companies to drive innovation, explore design alternatives, and evaluate product performance more efficiently than with physical testing. However, the IP generated in this activity is often simply lost. In fact, companies are spending millions on performing simulations but failing to capitalize on much of the generated value.

SIMULIA SLM provides the ability to govern and manage simulation IP based on Dassault Systèmes' V6 platform, the online collaborative environment for PLM 2.0. It 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. SIMULIA SLM also simplifies the capture, re-use, and deployment of approved simulation methods and best practices, providing improved confidence in the use of simulation results for rapid decision-making.

Critical elements for managing the simulation lifecycle:

Collaboration

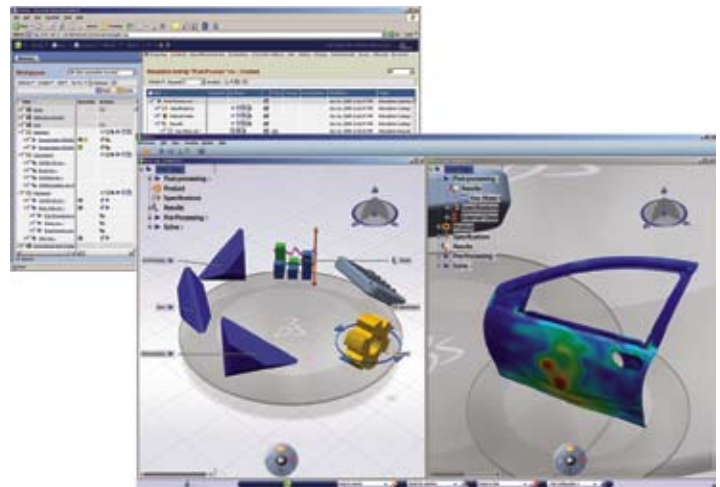
Product designs involve trade-offs between multiple performance disciplines such as strength, weight, vibration, and durability. SIMULIA SLM supports collaboration among all key stakeholders so that innovative products satisfying wide-ranging performance requirements can be developed quickly and efficiently.

Simulation Data Management

SIMULIA SLM enables simulation-related data to be collected, secured, managed, and associated with related product data in a central repository. It maintains the relationship between engineering targets and key simulation results and provides a searchable environment for valuable related data. It also provides the ability to trace the lifecycle history of individual simulation processes including parameters, assumptions, and results that influence key design decisions.

Integration and Process Automation

Product performance analysis is facilitated by a broad spectrum of best-in-class and customer-proprietary simulation applications. SIMULIA SLM provides the capability to connect these various tools in an open,



yet controlled manner. As organizations mature the management of their simulation data and processes, SIMULIA SLM provides the resources to capture, automate, and deploy approved simulation workflows to non-expert simulation users.

Decision Support

Simulation is used to predict the performance attributes of design candidates and their suitability toward meeting engineering targets. SIMULIA SLM provides decision support mechanisms that enable cross-functional insight and guide requirements-driven design decisions.

Benefits

- Improve simulation data quality and traceability
- Increase productivity by accessing the right data quickly
- Improve confidence in simulation results by deploying best practices
- Accelerate decision-making by sharing simulation information with distributed teams
- Secure intellectual property by controlling access privileges

SIMULIA SLM Features & Capabilities

User Interface

SIMULIA SLM can be accessed via:

- A standard Web-based thin client browser application such as Microsoft Internet Explorer.
- ENOVIA-3D Live, which provides 3D, visual navigation over SIMULIA SLM entities.

Simulation Entities

Simulation Process – The top-level entity is a Process. This entity collects or references all of the data and controls all of the activities associated with building and executing a simulation.

Simulation Templates – Enable organizations to capture and deploy their best-practice simulation methodologies to a wide user base of analysts and designers to perform accepted and approved simulations with confidence and repeatability.

Simulation Category – Simulation data can be logically grouped and collected or referenced beneath Processes or Activities in folder-like entities named Categories. There are six default Categories: Product, Specifications, Internal Data, Validated Data, Context, and Results.

Simulation Activity – Most Processes consist of one or more activities. Often these activities are enabled by a simulation application such as Abaqus/CAE for pre-processing, or Abaqus/Standard for solving. Any number of Simulation Activities can be configured within a Simulation. These activities can collect or reference their own data in Categories and can integrate other simulation applications into SIMULIA SLM via Connectors.

Hosts – Hosts are used to capture the information related to an execution host. This information includes the type of operating system, the scratch directory location, and the list of applications which can be run on the host.

Applications – Applications are used to describe the characteristics of applications found on execution hosts. This information includes the execution path, the application version, and the specific execution directory that might be needed.

Connector – The Connector framework allows a diverse set of applications to be deployed and executed from within the SIMULIA SLM environment. Connectors are currently available for Abaqus, CATIA, and select

third-party simulation applications such as Nastran, HyperMesh, AcuSolve, and STAR-CD. Connectors can be downloaded from the SIMULIA SLM Web site or easily configured at your site.

Simulation Attribute Groups – A Process or Activity can be associated with an Attribute Group in order to create and assign a set of searchable, type-specific attributes to the Simulation.

Simulation Jobs – These job entities control and record detailed information about all instances of the execution of a Process or Activity.

Export/Import Rules – Pre-configured rules governing the specification of data that should be exported from SIMULIA SLM prior to executing a Simulation Job and imported into SIMULIA SLM upon completion of a Simulation Job can be established and maintained for quick reuse in the Export/Import Rules.

Document – Document management principles are enabled to manage versioned and/or non-versioned data files within simulation entities.

Parameters – A block of local, shared parameters are provided to manage updateable variables that capture the physical or performance characteristics of the product being simulated, or variables needed in order to process and execute the Process and its Activities.

SLM Operations

The PLM operations listed below are available for most of the Simulation Entities:

Lifecycle – A SIMULIA SLM entity can be assigned a Lifecycle to govern the behavior of the object over the course of its useful life. Promotion or demotion of the entity through its lifecycle states can invoke a review cycle or determine entity behaviors such as access control policies.

Access Control – User privileges can be assigned for accessing, creating, editing, or altering an entity and the stage of the entity's lifecycle in which these privileges apply.

History – Provides a fully traceable and auditable record of all transactions related to an entity.

Impact Graph – Displays whether an entity is current or out of date, depending on changes to the status of upstream input and the resulting

effect on the downstream output of the entity. Other standard PLM operations—such as revise, copy, delete, and transfer ownership—are also available for most SLM entities.

Job Execution Framework

A Simulation Process or Simulation Activity can be launched and executed from SIMULIA SLM. A framework is provided to allow these jobs to be run on a local host or be distributed to a compute cluster and optionally utilize Distributed Resource Management (DRM) software. Capabilities are provided to minimize the network flow of the large files often associated with simulation.

Application Programming Interface

Enables organizations to create custom user interfaces and vertical applications that access SLM data and execute key SLM capabilities, especially useful for automating mature, standardized simulation methodologies.

Pricing and Licensing

SIMULIA SLM is priced and licensed on a Named User basis. Named User licenses are available in annual or perpetual form with optional maintenance terms.

Hardware and Software Compatibility

For hardware and software compatibility information, please visit www.simulia.com/products/slm.

Documentation

Full online documentation and help is provided for SIMULIA SLM.

Product Support

SIMULIA SLM is supported in the same high-quality manner as all other SIMULIA products. The SIMULIA Online Support System is also available to provide answers to frequently asked questions and initiate support requests.

For more information on SIMULIA SLM, visit www.simulia.com/products/slm.

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