Dassault Systèmes Announces New Realistic Simulation Technology from SIMULIA

Abaqus 6.10 Provides Native CFD Capability for Fluid-Structure Interaction, plus more than 100 Customer-Requested Enhancements

This addendum is associated with the 24-May-2010 press release from Dassault Systèmes.

In response to expanding industry demand for realistic simulation, the new release delivers on more than 100 customer-requested enhancements for modeling, performance, usability, visualization, multiphysics, and core mechanics. Designers, engineers, and researchers in all industries can use the new capabilities to rapidly assess realistic physical behavior of materials and products, in order to improve product performance while reducing development time and cost.

Key Features of Abaqus 6.10:

Multiphysics

- Interface for CFD modeling, execution, and visualization in Abaqus/CAE.
- Coupling with Abaqus/Standard or Abaqus/Explicit for Fluid-Structure Interaction and Conjugate Heat Transfer; Incompressible (transient or steady) Flows; Turbulence modeling.
- Co-simulation interface for third parties to integrate their software to Abaqus for coupled multiphysics simulation.
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Mechanics

- Improved AMS eigensolver performance for models that include structural/viscous damping or acoustic-structural coupling.
- Enhanced modeling of fracture of composite materials with XFEM.
- Parallel processing improvements for simulations that use XFEM or the implicit dynamic procedure.
- A new iterative equation solver offers significant performance enhancements for simulations involving large blocky structures, such as oil reservoirs, engines.
- Geostatic procedure enhanced to automate the process of specifying initial stress within soil models.
- Enhanced coupled temperature pore-pressure displacement for modeling heat transfer in porous materials. This is useful for analyzing petroleum reservoirs, nuclear waste repositories, or freeze/thaw cycles in buried pipelines.
- A new model for capturing high-rate impact of ceramics and other brittle materials, based on the well-accepted Johnson-Holmquist formulation.
- New capability to analyze structures subject to air blast loading.
- Dynamic load balancing of compute resources improves performance of domain decomposition parallel processing.

Modeling and Meshing

- Expanded set of geometry edit tools for creating midsurface representations of thin solid parts for more efficient simulations.
- General 3D sweep capability for creating complex, curved geometric features, including solid, shell, or cut geometric features such as exhaust manifolds of engines, or window frames in aerospace structures.
- Several meshing improvements for quality and robustness of surface and tet meshing.
- Improved interface for controlling local mesh gradation and density with enhanced usability and additional controls including double-biased seeding option.

Usability and Visualization

- Part or assembly based view cuts capability for both meshes and geometry allows interior of models to be visualized which makes it easier to position assembly components and assign attributes.
- Enhanced overlay plots functionality with capability for loading multiple output databases in a single operation.
- Colored vector symbols can be displayed based on magnitude with control over symbol density and plotting of vector symbols on view cuts.

For additional product information, visit: www.simulia.com/products/unified_fea.

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About SIMULIA
SIMULIA is the Dassault Systèmes brand that delivers a scalable portfolio of Realistic Simulation solutions including the Abaqus product suite for Unified Finite Element Analysis, multiphysics solutions for insight into challenging engineering problems, and SIMULIA SLM for managing simulation data, processes, and intellectual property. By building on established technology, respected quality, and superior customer service, SIMULIA makes realistic simulation an integral business practice that improves product performance, reduces physical prototypes, and drives innovation. Headquartered in Providence, RI, USA, SIMULIA provides sales, services, and support through a global network of regional offices and distributors. For more information, visit www.simulia.com.

About Dassault Systèmes
As a world leader in 3D and Product Lifecycle Management (PLM) solutions, Dassault Systèmes brings value to more than 115,000 customers in 80 countries. A pioneer in the 3D software market since 1981, Dassault Systèmes applications provide a 3D vision of the entire lifecycle of products from conception to maintenance to recycling. The Dassault Systèmes portfolio consists of CATIA for designing the virtual product - SolidWorks for 3D mechanical design - DELMIA for virtual production - SIMULIA for virtual testing - ENOVIA for global collaborative lifecycle management, and 3DVIA for online 3D lifelike experiences. For more information, visit http://www.3ds.com.

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