ANSYS 13.0(R): Built for Fidelity, Speed and Power

Released : Oct 26, 2010

Latest Software Release Supports Faster Time to Market and Lower Development Costs

PITTSBURGH--(BUSINESS WIRE)-- ANSYS, Inc. (NASDAQ: ANSS) today announced the launch of ANSYS(R) 13.0, the newest release of its engineering simulation technology suite designed to optimize product development processes -- reducing the time and cost needed to foster product innovations.

The advanced technology behind ANSYS 13.0 includes hundreds of new features that make it easier, faster and cheaper for users to bring new products to market, with a high degree of confidence in the ultimate results they will achieve. ANSYS 13.0 delivers new benefits in three major areas:

-- Greater fidelity via new solver methods. As engineering requirements and design complexity increase, simulation software must produce more accurate results that reflect changing operating conditions over time. ANSYS 13.0 features an electromagnetic transient solver that produces higher-fidelity results in dynamic simulation environments, among other new features.

-- Higher productivity built on an adaptive architecture. ANSYS 13.0 includes dozens of features that minimize the time and effort product development teams invest in simulation. For example, as product designs grow in size and complexity -- and consideration of a single physics is no longer enough -- ANSYS 13.0 makes it easier for users with different engineering specialties to work collaboratively to exchange data and develop real-world simulations that incorporate multiphysics.

-- Performance innovation via software and computational power. ANSYS 13.0 can provide speedup ratios that are dramatically greater than previous software releases. Complex multiphysics simulations can be accomplished more quickly and efficiently, speeding up product development and market launch initiatives.

"ANSYS 13.0 builds on the foundation of previous ANSYS releases. It especially addresses user feedback by incorporating valuable capabilities that compress design cycles, optimize product performance across multiple physics, maximize the accuracy of virtual prototypes and automate the simulation process," said Jim Cashman, president and CEO of ANSYS. "The release will create a significant competitive advantage for users, making it easier and faster to bring innovative new products to market -- which has become an imperative in today's economy."

"Red Bull Racing knows a lot about the need for speed. ANSYS helps us move to the next level of racing by empowering us to innovate car designs much quicker, which makes us more competitive race by race. At the end of the day this can help us achieve our goal of winning more races," said Steve Nevey, business development manager at Red Bull Technology.

Fidelity

Improvements in ANSYS 13.0 enhance solution speed and fidelity, offering customers an even greater advantage. The new software release includes solver methods that leverage advanced technology to more quickly deliver accurate answers. For example, in the structural mechanics arena, 3-D rezoning can be used for applications that involve large shape deformations. It allows engineers to stop their simulation as their mesh becomes distorted -- then remesh the material's current state and continue the simulation.
The HFSS(TM) transient solver for dynamic electromagnetic simulations -- such as broadband and radar -- incorporates automatic adaptive mesh refinement and an innovative local time-stepping procedure to accurately represent the geometry and fields while optimizing runtime, stability and efficiency. In addition, a new hybrid solver bridges finite element and integral equation methods for high-frequency electromagnetics problems, making HFSS the first commercial code to have this capability. The technology is ideal for applications that combine simulation over a large distance, such as antennas, with detailed features and complex materials, such as computer components.

For modeling turbulence in fluid environments, an embedded large eddy simulation (LES) solver delivers a faster solution yet maintains accuracy, applying LES to complex areas of interest and faster-solving Reynolds average Navier-Stokes (RANS) to the rest of the solution. ANSYS 13.0 also includes a new fluid dynamics capability for multiple reference frames, which enables engineers to model multiple moving systems simultaneously - for example, the rotation of wheels as a car moves around a corner.

**Productivity**

ANSYS 13.0 is built to enhance users’ productivity, especially critical when running complex multiphysics engineering simulations. One customer leveraging ANSYS advanced capabilities is Chromalloy, which evaluates gas turbine engine components to determine the effects of various stresses. "Chromalloy needs to evaluate the product designs of compressors or turbine blades based on real-world conditions. That means multiphysics, including fluids, thermal and mechanical/structural. The advances in the newest version of ANSYS software will help us to better understand those forces and to continue to bring the highest quality products to the market," said Page Strohl, structural design manager at Chromalloy.

New process compression capabilities in ANSYS 13.0 will make the work of customers like Chromalloy even more efficient and seamless. The release leverages the ANSYS foundation of open and flexible architecture, resulting in customized engineering workflows that can cut time and costs from the simulation process. An integration with Microsoft(R) Excel(R) enables users to interact with spreadsheets that contain analytic representations of models and parameter table definitions. Other enhancements include an innovative cutcell meshing feature that produces nearly all hexahedral elements on complex 3-D geometry automatically, an external data mapper that imports data in the form of a column text file defining a point cloud, and tighter integration among the Maxwell(R), HFSS and mechanical solvers when performing electromagnetic-thermal-structural simulations.

**Performance**

ANSYS 13.0 brings a new level of software and computational power to engineering simulation. Power enhancements include a new and unique application of variational technology that reduces solution time by a factor of five to 10 when applied to harmonic analysis. The latest ANSYS release also features greater support for GPU processors, which can be offloaded with complex, time-consuming algorithms to increase both processing speed and accuracy.

The integration of features new to release 13.0 aligns with the ANSYS vision to make multiphysics engineering simulation tools accessible to all who need them. The suite delivers fluid and structural simulation tools for turbomachinery design and analysis, such as cyclic symmetry and multiple moving reference frames; new models for internal combustion (IC) engine applications -- spray, ignition and combustion; and new process and energy industry solutions, including multiphase, real gas, nucleate boiling, and chemical reaction tools. Meshing, element modeling, more-tightly coupled fluid-structure interaction (FSI), nonlinear functionality and other improvements round out the list of new features.

"Based on close interactions with our customers, we have designed ANSYS 13.0 to address their most pressing needs for high-quality, fast and powerful simulation results that boost their product development efforts," Cashman said. "The hundreds of innovative new features in ANSYS 13.0 will make it easier and more cost-effective than ever to apply engineering simulation technology to confidently bring new products to market -- a business capability that becomes more critical every day."

ANSYS 13.0 will be available for customer download later this year.

For downloadable images, visit www.ansys.com/newsimages. For details about ANSYS 13.0’s new features, visit www.ansys.com/products/new-features.asp.

**About ANSYS, Inc.**

ANSYS, Inc., founded in 1970, develops and globally markets engineering simulation software and technologies widely used by engineers, designers, researchers and students across a broad spectrum of industries and academia. The company focuses on the development of open and flexible solutions that enable users to analyze designs directly on the desktop, providing a common platform for fast, efficient and cost-conscious product development, from design concept to final-stage testing and validation. The company and its global network of channel partners provide sales, support and training for customers. Headquartered in Canonsburg, Pa., U.S.A., with more than 60 strategic sales locations throughout the world, ANSYS, Inc. and its subsidiaries employ more than 1,600 people and distribute ANSYS products through a network of channel partners in 40+ countries. Visit www.ansys.com for more information.

ANSYS, ANSYS Workbench, Ansoft, AUTODYN, CFX, FLUENT, and any and all ANSYS, Inc. brand, product, service and feature names, logos and slogans are registered trademarks or trademarks of ANSYS, Inc. or its subsidiaries in the United States or other countries. All other brand, product, service and feature names or trademarks are the property of their respective owners.

ANSS-T