ANSYS 18.1 Expands Pervasive Engineering Simulation

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PITTSBURGH, May 16, 2017 /PRNewswire/ -- Engineers can create next-generation products quicker and easier with today's release of ANSYS® 18.1. ANSYS (NASDAQ: ANSS) continues to build upon the digital exploration and digital prototyping capabilities released in ANSYS 18 – enabling organizations to simulate more upfront, limit costly late-stage design changes, and bring their innovative products to market faster and easier.

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"Products are becoming smarter and organizations are adopting simulation across the entire lifecycle to digitally gain insight into product choices at every stage of the process – a growing trend we call pervasive engineering simulation. Our customers, large and small, are developing the products of tomorrow and they know that simulation is the only way to gain the engineering insight they need to make those products a reality," said Mark Hindsbo, ANSYS general manager. "This latest release continues the tradition of having the most complete and accurate solution portfolio in the industry, so our customers can trust the simulation results to conquer the toughest design challenges and accelerate product innovation. And to bring these capabilities to more and more users, enabling every engineer to use simulation in their product development."

Highlights of the release include:

Faster, Higher Fidelity for Large-scale Fluid Simulations

In the fluids suite, ANSYS 18.1 delivers faster, higher fidelity – enabling users to simulate more quickly and accurately. Users will benefit from greater flexibility setting up periodic boundaries to deliver high fidelity results up to 9 times faster for in-cylinder diesel simulations. Turbomachinery designers can now reduce problem size and time to convergence radial turbomachinery simulations when they apply complex vibrational modes from a cyclic modal analysis to CFX flutter analysis. ANSYS 18.1 also provides further improvements to workflow and meshing that enables novice users to quickly become productive while providing new opportunities for experienced users to excel.

Ease of Use and Workflow Enhancements for Optimized Structural Designs

In the structures suite, ANSYS 18.1 has added new capabilities within its topology optimization technology to analyze complex materials and optimize designs making it easier for organizations to manufacture products. Users can now combine load cases from modal and static structural analysis to look at designs that meet frequency and structural requirements. Designers will benefit from the new optimization constraint capabilities, giving them more control over manufacturing constraints to help ensure the most optimized designs are built. ANSYS 18.1 offers new functionality to increase the value simulation brings to organizations. Improved high-performance computing capabilities enable users to design products smarter and faster early on in the design process.

Faster, Easier Analysis for Electromagnetic Product Design

Designers will benefit from new significant capabilities in the electromagnetics suite. ANSYS 18.1 expands its noise-vibration-harshness (NVH) analysis to include both magnetostriction and induced magnetostriction effects. That greatly enhances the accuracy of NVH studies of electrical machines and transformers. NVH is an important analysis required by manufacturers of electric motors used in hybrid electric vehicles, appliances and commercial transformers and other application where quiet operation of the machine is an essential design parameter. Also, ANSYS 18.1 is enhanced with new a characteristic mode analysis solver. This new capability enables electronics designers to study antenna placement and antenna synthesis for devices such as a smart watch, mobile phones and Internet of Things devices. The characteristic mode analysis accurately predicts the fundamental resonance characteristics of an antenna or the platform to which they are mounted, allowing engineers to choose the optimal location for the antenna on the device and synthesize the desired antenna pattern.

ANSYS AIM pushes digital exploration capabilities with enhancements across all physics

ANSYS® AIM® further expands the landscape for digital exploration in ANSYS 18.1 with enhancements across all physics. Built for design engineers on ANSYS' proven solver technology, AIM now supports fluid simulations through porous media, such as filters, perforated plates, packed beds and flow distributors. Engineers can now explore more fluid designs under a wide variety of circumstances, all while not sacrificing speed and ease of use simulations. Support for bi-linear isotropic hardening plasticity enables users to achieve more accurate results in designs where material yield overloading is a concern. Users will benefit from AIM's one-way thermal-magnetic coupling to create accurate designs for electromechanical products operating at elevated temperatures easier.

ANSYS SpaceClaim continues to streamline modeling tasks for faster, easier optimization

ANSYS® SpaceClaim® continues to build upon its powerful optimization tools for additive manufacturing in ANSYS 18.1. Enhanced infill structures capabilities enable users to increase design strength without sacrificing weight in their product design. This latest release also brings the powerful scripting functionality and interactive features to the SpaceClaim user interface. Now designers can create scripts and provide inputs at various stages of the design process. Improvements have also been made to the shared topology method giving users a more robust transferring of connections between components – saving them time in the design process.

For more details about the release, please visit http://www.ansys.com/Products/Release-Highlights. Current customers can now download ANSYS 18.1 from the Download Center on the ANSYS customer portal.

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If you've ever seen a rocket launch, flown on an airplane, driven a car, used a computer, touched a mobile device, crossed a bridge, or put on wearable technology, chances are you've used a product where ANSYS software played a critical role in its creation. ANSYS is the global leader in engineering simulation. We help the world's most innovative companies deliver radically better products to their customers. By offering the best and broadest portfolio of engineering simulation software, we help them solve the most complex design challenges and create products limited only by imagination. Founded in 1970, ANSYS employs thousands of professionals, many of whom are expert M.S. and Ph.D.-level engineers in finite element analysis, computational fluid dynamics, electronics, semiconductors, embedded software and design optimization. Headquartered south of Pittsburgh, Pennsylvania, U.S.A., ANSYS has more than 75 strategic sales locations throughout the world with a network of channel partners in 40+ countries. Visit www.ansys.com for more information.

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