ANSYS 19.1 Delivers the First Comprehensive Solution for Simulation-Based Digital Twins

May 15, 2018

PITTSBURGH, May 15, 2018 /PRNewswire/ -- With today's release of ANSYS® 19.1 software, product developers can spur product innovation by rapidly building, validating and deploying simulation-based digital twins within a single workflow. ANSYS' (NASDAQ: ANSS) latest release builds upon its industry-leading products and platform across all physics, empowering customers to accelerate productivity and eliminate product complexity – lowering costs and time to market.

image

Companies are faced with unrelenting pressure to drive innovation and increase product quality while reducing cycle times, costs and risk, especially once a product is in operation. ANSYS 19.1 delivers ANSYS® Twin Builder™, a first-of-its-kind product enabling customers to build, validate and deploy simulation-based digital twins within one workflow – potentially saving millions of dollars for customers in the oil and gas, industrial, energy, and aerospace and defense industries.

Traditional preventive maintenance for industrial assets leads to expensive and potentially unnecessary maintenance costs. Those costs can be greatly reduced with a digital twin, which combines accurate physics-based virtual replicas of a product with data collected using industrial internet of things (IIoT) connectivity platforms. The resulting intelligence and predictive maintenance insights enable engineers to analyze smart machines in real-world operating conditions and make informed decisions that substantially improve product performance — reducing risk, avoiding unplanned downtime and nurturing product development with precise and individualized feedback about product behavior during operations.

ANSYS Twin Builder is the only product that offers a packaged approach for digital twins — enabling engineers to quickly build, validate and deploy these digital representations of physical products. The open solution integrates with any IIoT platform and contains runtime deployment capabilities for constant monitoring of every individualized asset used during operation. The combination of industrial asset connectivity with holistic system simulation, powered by ANSYS Twin Builder, empowers customers to perform diagnostics and troubleshooting, determine the ideal maintenance programs, optimize the performance of each asset and generate insightful data to improve the next generation of the products.

"Furthering our vision of Pervasive Engineering Simulation, ANSYS 19.1 combines all physics and delivers to our customers the most complete toolset to tackle the toughest design challenges," said Eric Bantegnie, vice president and general manager, ANSYS systems business unit. "This release empowers customers with the most efficient productivity gains — spurring product innovation and dramatically effecting their bottom lines, as well as on the global economy."

ANSYS 19.1 brings updates across all physics, from additive manufacturing to 3D design, to tame complexity and enhance analysis capabilities across product suites — improving users' productivity and generating more accurate designs and results.

Additional highlights of the 19.1 release include:

Taming Complexity and Faster Results Across Sectors
ANSYS 19.1 delivers new metal additive manufacturing solutions — empowering customers to quickly test their product designs virtually before printing a part. ANSYS® Additive Suite™ enables designers to optimize weight reduction and lattice density; create, repair and clean up CAD geometry; simulate the additive process; and conduct structural and thermal analysis for data validation. Now, users can incorporate simulation prior to the printing process to design, test and validate the performance of a part at the design stage even before turning on the printer – greatly reducing the high cost of physical trial and error.

Also available in the mechanical suite are new functionality and resources, including more than 100 material models from Granta. The extensive materials library folder within mechanical enables engineers to make material selection assignment and validation easier. With 19.1, topology optimization users have increased flexibility when running calculations where constraints or responses are defined.

In the fluids suite, ANSYS 19.1 offers users a new approach to cavitation modeling across diverse applications — from hydro pumps to rocket fuel systems. Users can now reliably predict cavitation using pre-existing material properties, without the need for empirical model parameters or extensive physical testing required by traditional approaches.

ANSYS 19.1 introduces ANSYS® EnVision ™Pro, a new version of ANSYS® EnSight ™Viewer, which empowers engineers to interact with EnSight data and create new views and photorealistic images in real time. Multiple viewing formats ensure data can be viewed by any audience, using any technology. Users can analyze data, create new retraced images and flipbooks, and garner insight from datasets even when they are offline, out of the office or not using EnSight.

"Sub-Zero uses simulation to design and iterate new functionalities quickly, without sacrificing product reliability or quality. With ANSYS solutions, Sub-Zero reduced the number of physical prototypes by 25 percent, which empowered our engineers to work faster and more cost-effectively, " said Anderson Bortoletto, principal engineer, Sub-Zero. "Sub-Zero relies on ANSYS to remain at the leading-edge of engineering —each ANSYS product update enables us to further optimize our product development."

In the embedded software suite, designers can take advantage of the four-times faster loading of project models and improved navigation features for increased usability.

In the 3D design suite, designers will greatly benefit from new capabilities that accelerate and extend for simulating more types of loading conditions, faster and with higher accuracy. In addition, fly-through and perspective view modes have been added for creating immersive visualizations. Also new

is the automated meshing feature and inclusion of instant post-processing of results, enabling engineers to create and view product behavior faster and easier than ever before.

"To develop successful medical implants like cardiovascular stents, Ninsight must simultaneously assess the hemodynamics and the structural performance of a huge set of wildly different designs," said Michael Stadler, chief technology officer, Ninsight, Inc. "With ANSYS Discovery Live we can harness the parallel processing power of NVIDIA graphics cards and reduce the initial development time of new stent designs by a factor of 10."

Enhanced Analysis Capabilities
ANSYS 19.1 delivers new analysis capabilities in the electromagnetics suite for designing wireless communication, autonomous and electrification technologies. New features include advanced driver-assistance systems and autonomous radar analysis and new hybrid simulation techniques for printed circuit board analysis. Comprehensive system modeling functionality is included with the ANSYS electromagnetic field simulation products — delivering advanced analysis capability for power electronics systems.

In the systems suite, ANSYS® medini analyze comes with significantly improved safety methods, including a native model-based editor for Hazard and Operability Study for the automotive, aerospace and defense and rail industries.

In the semiconductor suite, a new 3D integrated circuit (3DIC) graphical user interface wizard enables automatic and seamless connections between multiple dies, interposer and package for chip-level power and thermal integrity analysis, significantly improving usability and easing 3DIC setup and analysis. ANSYS 19.1 also extends the chip-package-system thermal solution for performing early reliability analysis, offering flexibility for system-level design, maximizing design coverage and reducing design margins and costly design iterations.

For more details about the features and enhancements available in ANSYS 19.1 visit www.ANSYS.com/19-1.

About ANSYS, Inc.
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 Pervasive 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.

To join the simulation conversation, please visit: www.ansys.com/Social@ANSYS

ANSYS 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

		Mary Kate Joyce
Contact	Media	724.820.4368
		marykate.joyce@ansys.com
		Annette Arribas, CTP
	Investors	724.820.3700
		annette.arribas@ansys.com

image

C View original content with multimedia:http://www.prnewswire.com/news-releases/ansys-19-1-delivers-the-first-comprehensive-solution-for-simulation-based-digital-twins-300648184.html

SOURCE ANSYS, Inc.