



ANSYS 16.2 Releases The Latest Advances In Systems Engineering Technology

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PITTSBURGH, Aug. 11, 2015 /PRNewswire/ -- Using the newly released ANSYS® (NASDAQ: ANSS) 16.2, engineers can now create virtual prototypes of complete systems, enabling them to make significant strides in innovation and to unleash next-generation products within their industries.

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As products – from automobiles to smartphones to wearable technology – become more complex and development times continue to shrink, the need to simulate whole systems grows. Through simulation, engineers can take full advantage of the growing number of opportunities presented by the rapid innovation of materials, electronics and processes. While some manufacturers have optimized the design of components or smaller sub-systems, until today's ANSYS release, no comprehensive solution has existed for simulating complete systems. The complexity within systems arises from the challenges of connecting the individual pieces to ensure they work together as designed. By developing complete virtual prototypes, leading companies can jump-start their innovation and leapfrog the competition.

"ANSYS customers are already solving component and sub-system problems using the most advanced software available. But with today's release of ANSYS 16.2, they expand to the system level," said Jim Cashman, ANSYS president and CEO. "We're offering engineers the most advanced engineering solution technologies on the market to predict real-world product performance using accurate, fast and reliable simulation. By leveraging these new capabilities, enterprises will gain competitive advantage in a competitive market."

"Understanding how the whole system works is critical to developing an optimized design in minimal time," said Jim Shaikh, founder of yoomi, which creates self-warming baby bottle products. "We perform a series of design studies using the simulation software and utilize the results to build a simpler analytical model to crunch through thousands of possible geometric alternatives."

Part of this new simulation approach is made possible by enhancements to ANSYS® Simplorer®, a comprehensive platform for multidisciplinary systems modeling. In this new release, Simplorer can now assemble and simulate electrical, electronic, thermo-fluid, mechanical and embedded software components. The methodology offers advanced 3-D precision when needed, as well as reduced-order modeling for verifying multi-domain system performance interaction.

"The systems enhancements made in ANSYS 16.2 will elevate our product development process with its new 3-D simulation capabilities," said Steve Franceschini, director of engineering at Meggitt OECO, which develops power generation and conversion products. "With the ability to virtually build, test and validate our prototypes with ANSYS 16.2, we will have the ability to further innovate our reliable products faster."

AIM Advancements Expand Multiphysics Reach of Systems Engineering

ANSYS 16.2 offers significant advancements in systems engineering through ANSYS® AIM®, the first integrated and comprehensive multiphysics simulation environment designed for engineers, which was introduced earlier this year. AIM has rapidly developed and ANSYS 16.2 represents its next step forward. Among the many new multiphysics and systems capabilities are heat transfer and thermal-stress, gas flows, and structural deformation and stress.

Optimizing heat transfer and thermal-stress is a critical design issue for many types of industry applications, such as heat exchangers, thermal mixing valves, engine components and electronic devices. In such applications, an accurate prediction of the temperature and heat transfer in both the fluid and solid regions is essential to accurately predict the thermal and thermal-stress performance of the design. AIM now includes new features to support a comprehensive conjugate heat transfer analysis and one-way fluid-structure interaction to compute thermal-stress.

Predicting the correct flow field for compressible gas flows in the subsonic and transonic range is a critical design issue for many different applications. Industry applications include - high speed flow over airfoils or nacelles, and high-pressure flows in natural gas pipelines and valves. AIM now supports an accurate prediction of the flow field, variation of the gas density and thermal behavior for all compressible flow applications, which is critical for predicting the performance of a design.

In a range of structural applications, nonlinear contact is required to accurately predict deformation and stress in assemblies where multiple components are connected by interference fits, bolts, welds or are otherwise joined together. AIM includes robust nonlinear contact simulation using advanced solver technology for surface-to-surface contact combined with automatic contact surface detection and automatic nonlinear solution control.

AIM makes all of these simulation applications available to experts within one physics domain, as well as product designers who need to span multiple domains, making simulation more broadly applicable across different engineering disciplines.

Customization Critical in Systems Engineering

Due to the complexity of systems engineering, workflow and automation are critical. ANSYS 16.2 automates the overall approach to developing embedded software systems for avionics. A new systems development product, ANSYS® SCADE System Avionics Package™, simplifies systems design capabilities for the aerospace and defense industries. It delivers out-of-the-box templates for compliant design systems that are compliant with standard avionics protocols and operating systems, including: ARINC 653, ARINC 429 and AFDX configurations.

To accommodate the needs of a wide varieties of industries that require more customized workflows, ANSYS has added new capabilities in the Workbench platform and ANSYS Customization Toolkit (ACT) to customize simulation tools to accelerate the overall design process and workflows.

ACT wizards provide customized simulation instructions and user interfaces to integrate any application in Workbench. These wizards span workflows across applications and guide the user through a single set of instructions.

Custom templates, as a part of the ACT enhancements, are also available in AIM to provide an authoring tool for highly automated and detailed simulation processes. These templates span the entire AIM workflow from geometry to results, as well as across all physics that may be a part of the simulation process. This critical capability enables multi-disciplinary teams to work effectively together and to deliver innovative advances across all disciplines of product design.

About ANSYS, Inc.

ANSYS brings clarity and insight to customers' most complex design challenges through fast, accurate and reliable engineering simulation. Our technology enables organizations — no matter their industry — to predict with confidence that their products will thrive in the real world. Customers trust our software to help ensure product integrity and drive business success through innovation. Founded in 1970, ANSYS employs over 2750 professionals, many of them experts in engineering fields such as finite element analysis, computational fluid dynamics, electronics and electromagnetics, embedded software, system simulation and design optimization. Headquartered south of Pittsburgh, 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.

ANSYS also has a strong presence on the major social channels. To join the simulation conversation, please visit: www.ansys.com/Social@ANSYS

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