



## ANSYS® 14.5 Bolsters Product Performance and Integrity Through Deeper Design Insight

November 13, 2012

PITTSBURGH, Nov. 13, 2012 /PRNewswire/ -- Building upon its comprehensive portfolio of advanced multiphysics engineering simulation technology, ANSYS (NASDAQ: ANSS) today released [version 14.5](#) to further support an integrated and streamlined approach to design exploration and the creation of a complete virtual prototype. New multiphysics capabilities are seamlessly brought together with the ANSYS Workbench platform to deliver unmatched engineering productivity and innovation.

(Logo: <http://photos.prnewswire.com/prnh/20110127/MM38081LOGO> )

In the real world, product performance varies by operating conditions, consumer usage, manufacturing processes and material properties. As products become increasingly complex, it is more challenging for engineers to fully understand the performance implications of design variations. Multiphysics simulation technology enables companies to make informed decisions based on insight gained from these analyses to deliver optimal results. Built on a platform that streamlines workflow among simulation applications, ANSYS 14.5 delivers many new and critical multiphysics solutions, enhancements to pre-processing and meshing capabilities as well as a new parametric high-performance computing (HPC) licensing model to make design exploration more scalable.

"It's no secret that while today's products are getting smarter, they're also becoming more complex," said Jim Cashman, president and CEO at ANSYS. "Having a holistic view of the product requirements and design is crucial to reduce design uncertainty and ultimately create a successful product. Our customers are depending on the depth and breadth of ANSYS 14.5 and our Workbench platform to confidently predict how their products will perform and, at the end of the day, provide good value and satisfaction to their customers."

### NEW PARAMETRIC LICENSING SOLUTIONS FOR DESIGN EXPLORATION

ANSYS 14.5 builds on a tradition of HPC leadership. The technology supports robust design exploration via a combination of Workbench's enhanced parametric simulation technology with improved job management and a new HPC licensing solution that enables scalable throughput computing.

Specifically, the new [HPC Parametric Pack](#) amplifies the available licenses for individual applications (pre-processing, meshing, solve, HPC, post-processing), enabling simultaneous execution of multiple design points while consuming just one set of application licenses.

### CHIP-PACKAGE-SYSTEM DESIGN FLOW

To meet increasing market demands of higher performance, smaller size and lower-cost electronics, the design of electronic chips, packages and systems requires an integrated analysis and verification methodology. To resolve these challenges, ANSYS 14.5 introduces the first chip-package-system (CPS) design flow on the market. This coupled approach addresses multidisciplinary requirements from the first phase of the design process and results in a final product whose individual components work together as an integrated system.

ANSYS 14.5's new CPS design flow links ANSYS subsidiary Apache Design's integrated circuit (IC) power analysis products to ANSYS' electromagnetic field simulation products. Additionally, the power delivery network channel builder automatically connects electronic package models from ANSYS SIwave™ to IC power simulations in Apache's RedHawk™ and Totem™ for increased convenience.

### ADVANCED MESHING SOLUTIONS

Users of ANSYS 14.5 can create higher-fidelity simulation results faster. ANSYS TGrid™ functionalities are integrated in the ANSYS Fluent® environment in version 14.5 to further reduce pre-processing time. CAD readers and new advanced surface meshing capabilities are also integrated and available in a single user environment. Additionally, meshing enhancements allow for higher-quality hexahedral meshes that result in smaller problem size and overall reduced solver time.

### COMPLEX 3-D COMPOSITES SHAPE SIMULATION

The use of composites parts across different industries is growing due to their ability to reduce the weight of a product. While many composites can be efficiently modeled as thin structures, some complex geometries, such as turbine blades, pressure vessels and automotive structures, require the setup of 3-D models and their inclusion within larger assemblies made of non-composites parts. ANSYS Workbench provides the necessary framework and streamlined workflow in version 14.5 to further improve the ability to [create 3-D layered composites](#) from complex geometry and conveniently combine them with non-composites parts in global assemblies.

### EXTENDED FLUID-THERMAL MULTIPHYSICS CAPABILITIES

Continuing its history of innovation in multiphysics, ANSYS 14.5 introduces extended [fluid-thermal capabilities](#), such as two-way coupling between fluid simulation in ANSYS Fluent and electromagnetic field simulation in ANSYS Maxwell®. The ANSYS Workbench platform supports the efficient coupling of multiple physics models and, when paired with this new feature, users can quickly and accurately predict losses and understand the effects of temperature on material performance in electromechanical devices such as motors and transformers.

A holistic solution for one-way thermal-fluid-structure interaction (FSI), ANSYS system coupling supports a wide variety of one-way thermal FSI workflows, which promotes higher-fidelity simulations. Furthermore, the robustness of coupled two-way force/displacement FSI is enhanced, allowing engineers to gain insight into their complete products more quickly and with less hassle. A global liquid food packaging and processing leader, Tetra Pak, has seen marked improvements with 14.5's new two-way FSI capabilities:

"Historically, simulating two-way FSI has been an incredibly time-consuming and complex process and, in some applications, not even possible," said Ulf Lindblad, technology specialist at Tetra Pak. "The solution stabilization algorithm implemented in ANSYS 14.5 broadens the range of applications where we can execute this difficult task with increased accuracy and efficiency. Designing our systems with optimized FSI will ultimately lead to

improved machine performance for our customers and improved package performance for their consumers."

### **ESTEREL TECHNOLOGIES SCADE SUITE® COUPLING WITH ANSYS SIMPLORER®**

A systems-level engineering approach that brings hardware and software together earlier in the design process is crucial to avoiding design errors being introduced at a point when changes are costly.

With the integration of recently acquired ANSYS subsidiary Esterel Technologies' SCADE Suite with ANSYS Simplorer in version 14.5, companies can virtually validate power electronic and mechatronic systems earlier in the design process by simulating the embedded software with the hardware, including electrical, mechanical and fluidic subsystems. This capability increases the design fidelity and boosts confidence that products will perform as expected in the real world.

### **ANSYSHFSS™ FOR ECAD INTEGRATION**

As companies face pressure to do more with their current engineering resources, ANSYS 14.5 further streamlines the design workflow and introduces ANSYS HFSS for ECAD. This capability contributes to accuracy by enabling engineers to run complex 3-D HFSS simulations directly from the ANSYS Designer layout-based interface and from other popular layout-based ECAD environments.

Scott McMorrow, director of engineering at Teraspeed Consulting Group LLC, has chosen to switch to ANSYS HFSS, ANSYS DesignerSI™ and SIwave after using a competitor's electromagnetic modeling and simulation products for nearly 10 years. "After a two-year extensive evaluation and measurement correlation of the ANSYS tools against multiple industry products, the measurement comparisons have shown that the ANSYS solutions are robust and accurate across the widest range of applications and structures. We found through detailed measurement testing that HFSS is truly the 'golden standard' in electromagnetic modeling. When the structures we measured were modeled faithfully and the material properties were characterized and entered accurately, ANSYS HFSS produced extremely accurate results with no discernible difference between measured and modeled results."

ANSYS version 14.5 is available for download via the ANSYS Customer Portal: <https://www1.ansys.com/customer/default.asp>

Related images are available for download by the media at: <http://www.ansys.com/newsimages>

### **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 approximately 2,400 professionals, many of them expert in engineering fields such as finite element analysis, computational fluid dynamics, electronics and electromagnetics, and design optimization. Headquartered south of Pittsburgh, U.S.A., ANSYS has more than 65 strategic sales locations throughout the world with a network of channel partners in 40+ countries. Visit [www.ansys.com](http://www.ansys.com) for more information.

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