Technology Enhancements In ANSYS 15.0 Bring Increased Speed And Reliability To Structural Models

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PITTSBURGH, Dec. 17, 2013 /PRNewswire/ -- ANSYS, Inc. (NASDAQ: ANSS) today announced that with significant advancements in processing speed, users of ANSYS ®15.0 for structures can now spend more time studying their simulation results and less time setting up an analysis.

(Logo: http://photos.prnewswire.com/prnh/20130430/NE03388LOGO)

Released earlier this month, ANSYS 15.0 offers users a wealth of additional capabilities across its product portfolio. As the first in a series of updates highlighting improved functionality across three main physics areas, ANSYS today focuses on the enhancements to its structures offering at release 15.0. This series will provide deeper technical insight into the capabilities of its products that were not included in the previous ANSYS 15.0 public announcement.

Products are becoming more complicated with larger assemblies, complex geometries and advanced new materials. The updates in ANSYS 15.0's structural capabilities make it easier for users to arrive at fast, accurate solutions for products that will exceed their customer expectations.

Specific structural release advances include:

- This release brings significant improvements to composites modeling workflow. Submodeling technique is now supported enabling users to obtain high-fidelity local results and progressive damage is enhanced to estimate failure of composites products.
- With ANSYS 15.0, engineers can now virtually model bolt threads as a special contact region that defines all the thread attributes. This is a fast (often by a factor of 10) and accurate method when compared to detailed model. Contact capabilities are also extended to support modeling of wear between parts due to friction.
- Nonlinear adaptive meshing introduces the ability to automatically refine the mesh of parts when it experiences severe distortion during solution, leading to successful convergence. This method allows for up to 50 percent more deformation than a single analysis.
- Parallel meshing, model assembly and smart tools improve the handling of large models and assemblies. Model meshing performance is dramatically enhanced through advancements in meshing algorithms as well as through the introduction of a parallel part-by-part meshing engine that delivers up to a 27 times reduction in meshing time. Users also gain the ability to assemble both FEA and geometric models in the ANSYS Workbench™ environment to create complex assemblies.

> Jeff Harris, Research Engineer at NuVasive, finds value in this updated capability: "Since I'm not exclusively working with CAD models, it's helpful to use the new external model functionality to import external FEA models. Also, the ability to select nodes directly in Workbench makes it easier to create named selections, remote points, or even define beam elements between nodes because I don't always have clean geometrical faces or vertices to select.

- Solver performance has been improved for several applications. A new linear dynamics solver has been introduced to achieve an average of three times speedup on modal analyses. Innovation in our solvers provides a unique method for faster computation of harmonic analyses on cyclic and asymmetric models with total times reduced by a factor of up to 50.
- Scalability for high-performance computing has been improved across the board including problems involving contact. For a vibro-acoustics simulation a speedup of 16 times on 32 cores has been achieved while explicit solutions for rapid dynamics will see an average 10 times speedup on 16 cores. GPU acceleration is also available for newer generation GPU boards.

Next in this series of announcements, ANSYS will detail the innovative technical capabilities for its fluids and electromagnetic product lines that have been upgraded at release 15.0.

Visit www.ansys.com/ansys15.0 or our blog for more detailed information regarding the enhancements to ANSYS' structural offering at release 15.0.

Current customers can download the latest version of ANSYS 15.0 on the ANSYS Customer Portal.

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 more than 2,500 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 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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