Ansys 2021 R1 Unlocks Unlimited Possibilities for Engineering Teams

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Ansys' new technologies and platform capabilities are redefining product design for companies of all sizes

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Ansys_2021_R1

/ Key Highlights

- **With the newly launched Ansys 2021 R1, engineers harness advances in simulation technology together with ever-increasing computing power to drive new levels of product innovation**
- **Ansys 2021 R1 equips engineers to design the next generation of products that are safe, reliable and deliver breakthrough performance**

Recently launched Ansys 2021 R1 products deliver improvements in simulation technology along with the immense compute power of high-performance computing to reimagine what is now possible for global engineering teams. Ansys' (NASDAQ: ANSS) industry-leading simulation solutions offer new levels of collaboration, providing insight into product safety, reliability and performance.

Companies of every size in every industry are challenging traditional ways of working in pursuit of breakthrough innovation. The simplified workflows and unique product enhancements in Ansys 2021 R1 create opportunities for engineers to accomplish design and product development goals that were previously thought unattainable. With Ansys 2021 R1, engineers no longer need to develop workarounds because of technology limitations and make workflow compromises that increase design cost and risk.

Ansys 2021 R1 provides advancements for large electromagnetic system simulations that previously were not possible while including vendor components in those simulations with greater efficiency and scalability. These components can be encrypted, so vendors can share proprietary 3D component designs and create high-fidelity simulations.

Ansys 2021 R1 pushes semiconductor engineering boundaries, delivering comprehensive analysis of signal integrity, power integrity, thermal and mechanical stress on 3D multi-die systems. While thermo-mechanical stresses and warpage can damage 3D-IC packages, leveraging proven Ansys flagship technology enables users to increase product lifespan and reliability.

The advances in Ansys 2021 R1 coupled with Ansys® Cloud ™ drive faster simulations, simpler workflows and additional solver capabilities, making simulation accessible for companies of all sizes. Ansys Cloud improvements have empowered Ansys fluids, structures and electronics customers to quickly scale up to solve computational issues.

"With Ansys Cloud, the ability to immediately scale up machines is unparalleled," said Benjamin Turner, mechanical engineer at Hargrove Engineers + Constructors. "It eliminates the need to install any software and delivers pure convenience. I can use my smartphone to check my simulation's status."

As leading companies accelerate the pace of their autonomous vehicle (AV) and electric vehicle (EV) development, safety continues to be a top priority. Ansys 2021 R1 provides a comprehensive sensor solution for AVs, including an industry-leading, real-time, physics-based radar sensor capability, combined with closed-loop simulation validation to enhance AV safety. Also, new scanning and rotating lidar models boost AV simulation reliability. Additionally, Ansys' embedded systems and software solutions increase communication among team members and reduce embedded software certification costs. This delivers improved modeling and code generation flexibility for AUTOSAR automotive software components and provides support for the FACE 3.0 Technical Standard for military avionics. Lastly, Ansys' cutting-edge systems safety solution helps enhance EV and AV safety analyses by graphically pinpointing where potential system failures may occur, simplifying the software safety review process.

"Using medini analyze for software safety analysis (SSA), Robert Bosch GmbH can reduce the effort for SSA," said Sven Bergmann, project safety manager, Robert Bosch GmbH. "This enables reusability of information in one integrated tool, improves acceptance of software architects and eases review."

This new release makes comprehensive development of EV components a reality. Harnessing a new battery designer tool helps engineers optimize materials selection for creating next-gen batteries, while a new EV powertrain library speeds system simulation of electrified components. New software enhancements also add alarm sounds to vehicle advanced driver assistance systems that better EV driving safety, while new battery models equip engineers to tackle different scenarios including battery crush, cooling, nail penetration and module crush.

New customer requirements and increasingly shorter product development timelines present engineering teams with an unprecedented number of new challenges, ranging from system-level issues to fundamental component-level physics. With the acquisition of Analytical Graphics, Inc., Ansys now offers a comprehensive solution, enabling simulation from the component level all the way to a customer's entire mission. Ansys 2021 R1 also continues to push boundaries at the detailed physics level, equipping teams to make smarter decisions earlier in the product design process, empowering them to avoid costly mistakes that can negatively impact product quality and reliability.

Additionally, Ansys 2021 R1 makes it easier for engineering teams to collaborate on projects in this work-from-home era through latest advances in simulation process and data management provided by Ansys® Minerva, powered by Aras. Improved workflows help even novice engineers learn how to use this software quickly, while improving the sharing of data among expert users.

This release drives new levels of design exploration through capabilities like automated fluid-solid thermal analysis to easily predict fluid and solid thermal behaviors for the design and evaluation of electronics cooling and heat management devices. To create their unique 3D printers, Qualup SAS leverages Ansys® Discovery™ to visualize thermal and cooling design variations.

"Ansys Discovery allows us to quickly evaluate the influences of design variations on the thermal and internal ventilation of the print chamber as well as the influence of the design on the cooling of certain components," said Philippe Boichut, owner, Qualup SAS. "Discovery gives us the incredible possibility to modify the modeling live and to visualize the effects instantly — a perfect tool for designers."

Ansys 2021 R1 also helps manufacturing companies fill the gap between injection molding and structural simulation for short fiber reinforced composites that are increasingly used in automotive components and consumer goods. thyssenkrupp Presta AG uses these advances in simulation technology to help them steer toward the future of mobility with the short fiber workflow.

"Ansys 2021 R1's newest release of Ansys® Mechanical™ provides the ability to model the realistic and complex details of injection molded plastics, like the orientation of fibers and the presence of injection stresses in the parts," said Francesco Fiorini, structural and durability engineer at thyssenkrupp Presta AG. "This significantly increases the accuracy of our engineering developments."

"Ansys 2021 R1 will provide companies and engineering teams of every size with the industry-leading technology needed for developing products that will shape the future of our global community," said Shane Emswiler, senior vice president, Ansys. "Ansys 2021 R1 delivers unique capabilities that equip engineers to pioneer innovations that previously might have been impossible to imagine, creating a significant competitive edge and a faster path to market for their organizations."

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/ Contacts

Media Mary Kate Joyce
724.820.4368
marykate.joyce@ansys.com

Investors Annette N. Arribas, IRC
724.820.3700
annette.arribas@ansys.com

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