

# ANSYS 12.0: Launching a New Era of Smart Engineering Simulation

A full generation ahead of other solutions, ANSYS 12.0 takes product design and development to the next level.

*By Jim Cashman, President and CEO, ANSYS, Inc.*

The current economic climate has completely changed the way most companies view engineering simulation. Leveraging the power of virtual prototyping to compress the product development process and drive down costs is no longer a choice — it's a requirement for survival in an increasingly competitive environment.

In nearly every industry, driving product development through engineering simulation technology has become a key strategy to develop more innovative products, reduce development and manufacturing costs, and accelerate time to market.

Backed by the unmatched power of ANSYS 12.0 software, progressive companies are taking engineering simulation a step beyond. They have already realized the enormous strategic benefits of virtual prototyping — and are now seeking more from their investments in simulation. ANSYS 12.0 enables these forward-looking companies to maximize the efficiency of their simulation processes, to increase the accuracy of their virtual prototypes, and to capture and reuse their simulation processes and data. This next level of performance signals a new era of Smart Engineering Simulation, in which product innovations can be realized more rapidly, and more cost effectively, than ever before.

There is no company better qualified to launch this new era. ANSYS has led the engineering simulation industry for nearly 40 years, revolutionizing the field of engineering

simulation in much the same way that the internet and desktop publishing have revolutionized the broadband distribution of information. As a direct consequence of a long-standing commitment to simulation, ANSYS is the only company offering advanced simulation technologies that span all key engineering disciplines — and bringing them together in an integrated and flexible software platform designed specifically to support Simulation Driven Product Development.

Over the years ANSYS has made significant technology investments, acquisitions and partnership to ensure continuing leadership. We recognize that every technology breakthrough or market accomplishment has only been a stepping stone to our vision. Reflecting these investments — as well as the acquired wisdom of four decades in this industry — ANSYS 12.0 represents the fullest expression of our leadership position. It is the most comprehensive engineering simulation solution available today.

While the following pages offer a wealth of detail, I'd like to focus on the high-level benefits that our customers will realize as they leverage the full depth and breadth of ANSYS 12.0 to make product development smarter, better, faster and more collaborative than they ever thought possible.

## Smart Technologies = Smart Simulation

At ANSYS, we have applied our long history of technology leadership to create the world's smartest solution for engineering simulation — more automated, repeatable,



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persistent and intuitive than existing products. The groundbreaking ANSYS Workbench 2.0 platform is a flexible environment that allows engineers to easily set up, visualize and manage their simulations. ANSYS 12.0 offers unequalled technical breadth that allows customers to explore a complete range of dynamic behavior, from frequency response to large overall motion of nonlinear flexible multibody systems. ANSYS has also leveraged its industry-leading capabilities to create an unequalled depth of simulation physics, including the newly integrated ANSYS FLUENT solver, advancements in all key simulation physics, and enabling technologies for meshing, geometry and design optimization. ANSYS Engineering Knowledge Manager allows engineers to easily archive, search, retrieve and report their simulation data via a local machine or a centralized data repository. Not only does ANSYS 12.0 represent the smartest and best individual technologies, but it brings them together in a customized, scalable solution that meets the highly specific needs of every engineering team. Powerful and flexible, ANSYS 12.0 can be configured for advanced or professional users, deployed to a single user or enterprise, and executed on laptops or massively parallel computer clusters. As customer requirements grow and mature, ANSYS 12.0 is engineered to scale up accordingly.

#### **Better Prototypes, Better Products**

With its unique multiphysics, high-performance computing and complete system modeling capabilities, ANSYS 12.0 is a complete solution that takes virtual prototyping to a new level of accuracy, realism and efficiency. ANSYS 12.0 captures the response of a completely assembled system and assesses how a range of highly complex, real-world physical phenomena will affect not only individual components but also their interactions with one another. Flaws in product functionality can be recognized before investments are made in full-blown physical prototypes — and ideas that are validated in the virtual world can be fast-tracked to maximize agility and capture emerging market opportunities. Powered by fast and accurate solvers, design optimization with ANSYS 12.0 results in prototypes with a much higher probability of ultimate market success.

#### **Product Design at Warp Speed**

ANSYS 12.0 automates many manual and tedious tasks involved in simulation, reducing design and analysis cycles by days or even weeks. An innovative project management system allows custom simulation workflows to be created,

captured and automated with drag-and-drop ease. ANSYS 12.0 amplifies the capabilities and outputs of every member of the engineering staff, enabling them to work smarter, to intelligently make design trade-offs and to rapidly converge on the best designs. And, because ANSYS 12.0 is based on the most advanced technology and physics, design and engineering teams can commit to manufacturing operations with confidence — and without investing time and money in exhaustive physical testing.

#### **Redefining Collaboration**

Real-world simulation projects often involve a wide variety of engineering personnel — and generate large volumes of data that must be shared across the enterprise. With its broad support of simulation disciplines and native project management system, ANSYS 12.0 allows engineering teams to collaborate more freely, without software barriers or other technology obstacles. Within a single project, several engineers can assess their designs within individual disciplines, as well as easily coordinate multiphysics simulations. The single-project environment reduces redundancies and synchronization errors among different engineering teams. ANSYS Engineering Knowledge Manager also provides the tools to manage the workflow of a group of engineers and a myriad of simulation projects.

At ANSYS, we have always believed that engineering simulation is a sound investment — and today, it is emerging as one of the smartest investments an organization can make. We understand the incredible time and cost pressures under which our customers operate today, and ANSYS 12.0 is specifically designed to help them meet these challenges.

In the new era of Smart Engineering Simulation heralded by ANSYS 12.0, product development teams can work faster and more effectively than ever before — with a greater degree of confidence in their finished products. Because it provides a tremendous opportunity for engineers to design higher-quality, more innovative products that are manufactured faster, and at a lower cost, ANSYS 12.0 makes the most compelling case yet for engineering simulation as a powerful competitive strategy. But we are far from finished: ANSYS 12.0 is a milestone, not the destination, as we continually work to put our tools in the hands of every engineer who can benefit from them. As the power of ANSYS 12.0 is unleashed by imaginative engineering teams around the world, I look forward to the amazing product innovations that will result. ■

