Simulation in the News

ANSYS 19.1 — NEXT-GENERATION PERVASIVE ENGINEERING SIMULATION
Design Products and Applications, May 2018

The latest release of ANSYS software builds upon its industry-leading products and platform across all physics, empowering customers to accelerate productivity and eliminate product complexity — lowering costs and time to market. It includes advances in the simulation of structures, fluids, electromagnetics, semiconductors, systems and certified software that improve reliability, performance, speed and user experience. This release features some exciting new products.

ANSYS TWIN BUILDER

This first-of-its-kind product enables companies to build, validate and deploy simulation-based digital twins within one workflow — potentially saving millions of dollars for customers in the oil and gas, industrial, energy, and aerospace and defense industries.

ANSYS ADDITIVE SUITE

New metal additive manufacturing solutions empower customers to quickly test their product designs virtually before printing a part. The ANSYS Additive Suite enables designers to optimize weight reduction and lattice density; create, repair and clean up CAD geometry; simulate the additive process; and conduct structural and thermal analysis for data validation.
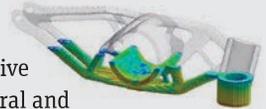
19.1 Release
ansys.com/19

GENERAL ELECTRIC CO. ENTERS INTO MULTIYEAR AGREEMENT WITH ANSYS
Pittsburgh Business Times, February 2018

The agreement provides GE access to the full breadth of ANSYS' industry-leading portfolio of engineering simulation software and experts, to enable multiphysics solutions in ground-based and on-wing gas turbine engines.

"With ANSYS technology further integrated into GE's engineering process, we can take our 30-year collaboration to the next level of strategic partnership, and enable ANSYS and GE to better drive innovation."

— Ajei Gopal, CEO, ANSYS

TSMC CERTIFIES ANSYS SOLUTIONS FOR ADVANCED 5NM PROCESS
HPCwire, April 2018

ANSYS RedHawk and ANSYS Totem have been certified by TSMC for the latest 5nm FinFET process so that mutual customers can meet increasing demands for next-generation mobile and high-performance computing (HPC) applications.

## ROLLS-ROYCE, THE UNIVERSITY OF NOTTINGHAM AND ANSYS PARTNER TO TRANSFORM AERO ENGINES
NAFEMS, March 2018

Collaborating in a research project, the three partners will improve modeling and simulation for bearing chambers and internal flow using new techniques to address air and oil flows in the engines. This will assist in the development of next-generation clean and quiet aero engines.

EMBRAER AND ANSYS ACCELERATE TIME TO MARKET FOR NEXT-GENERATION AIRCRAFT
MCADCafé, April 2018

Embraer's latest commercial jet made history as the only aircraft to receive on-time certification simultaneously by the Federal Aviation Administration, European Aviation Safety Agency and Brazilian Civil Aviation Agency. With ANSYS software onboard, Embraer met complex targets for flight performance in record time — confidently bringing cutting-edge aircraft to market faster than ever.
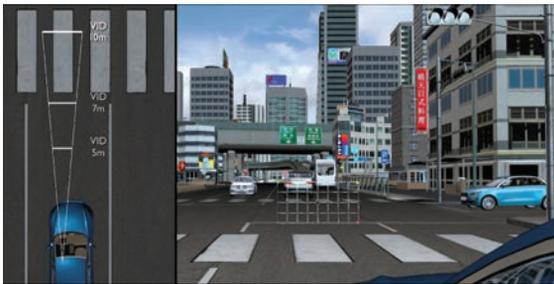
ANSYS ACQUIRES OPTIS
engineering.com, May 2018

With the acquisition of optical simulation leader OPTIS, ANSYS now delivers the industry's most comprehensive solution for simulating autonomous vehicles. By adding OPTIS's optical sensor and closed-loop, real-time simulation to ANSYS' leading multiphysics portfolio, the company offers the broadest toolset for validating the safety and reliability of autonomous vehicles — speeding time to market for these vehicles by mitigating the need for billions of miles of road testing.

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ENVISIONING THE SENSEABLE CITY AND THE IOT
Connected World, February 2018

The ways that industries operate and that people live, work and play are all enabled by sensors. Sensors are vital to reducing waste, decreasing human error and improving throughput.
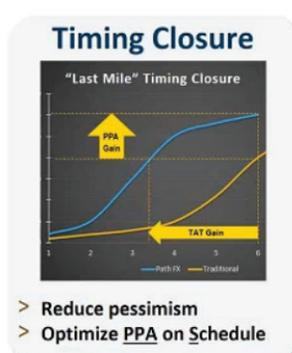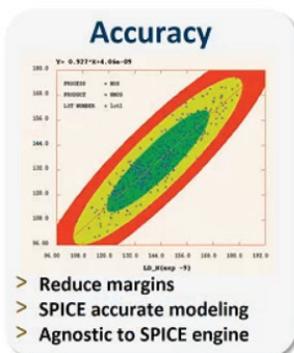
"The world will become a small village. Your location will not matter as long as you are part of the network."
— *Laila Salman, ANSYS*

A NEW PROBLEM FOR HIGH-PERFORMANCE MOBILE
SemiWiki.com, April 2018

Leading mobile vendor/suppliers are challenged by a new problem. They were hitting target 2.5 GHz performance goals on their application processors, but the yield was about 10 percent lower than expected. Using ANSYS semiconductor tools they were able to pin down the source of the problem.

Accuracy
> Reduce margins
> SPICE accurate modeling
> Agnostic to SPICE engine

Timing Closure
> Reduce pessimism
> Optimize PPA on Schedule

Coverage
> Multi-Voltage & DvD Timing
> Clock Jitter
> Aging

ANSYS and SAP Partner to Unveil Insights from Rich Data Across Engineering and Operations Value Chains

MCADCafé, June 2018

ANSYS and SAP SE have entered into a partnership to enhance the Intelligent Enterprise by linking engineering and operations with the digital supply chain and asset management. The first product of this partnership — called SAP Predictive Engineering Insights enabled by ANSYS — will create value by optimizing operations and maintenance based on real-time engineering insights. It will run on an SAP Cloud Platform to maximize speed, availability and flexibility.

The solution embeds ANSYS' pervasive simulation solutions for digital twins — ANSYS Twin Builder — into SAP's market-leading digital supply chain, manufacturing and asset management portfolio. SAP Predictive Engineering Insights enabled by ANSYS will reduce product cycle times and increase profitability by substituting predictive and prescriptive maintenance for traditional time-based maintenance of industrial assets. The combination of ANSYS and SAP solutions yields a unique software product that combines engineering and business insights in one package.

Organizations will reap tremendous benefits by using digital twins — virtual copies of a physical assets — to harness the massive amounts of data created during simulation and from data gathered by sensors on assets. By linking those diverse data sets, engineers gain valuable insights into product behavior to improve future development and spur innovation. Additionally, they can develop hybrid models that fuse machine learning with deep physics simulation models to accurately predict how an asset can fail after it is deployed.

By tracking how assets are designed, built and operated throughout the product lifecycle, organizations can gain immediate and valuable insights using SAP Predictive Engineering Insights enabled by ANSYS. This cloud-based industrial Internet of Things (IoT) solution uses a combination of real-time and predictive engineering
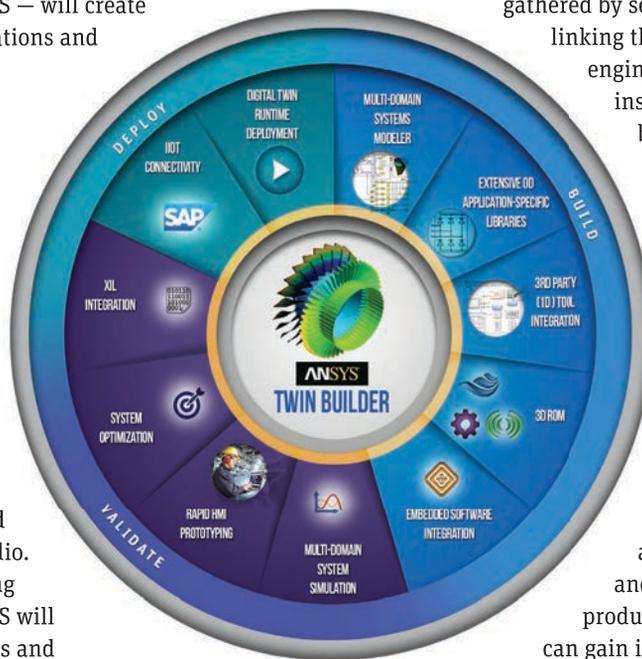
"A *digital twin* that ties together engineering models, manufacturing details and operational insights *including financial information* is unique in the industry."

— *Hala Zeine, president, Digital Supply Chain and Manufacturing, SAP*

Digital Twins: Making the Vision Achievable
ansys.com/achieve-digital-twin

analyses through ANSYS Twin Builder to build, validate and deploy digital twins. To connect a digital twin to test data or real-time data, Twin Builder easily

integrates with IoT platforms like SAP's cloud-based solution and provides runtime deployment. Once connected, the digital twin uses the current state of a product (including behavior under various environments and stresses) to simulate future states, enabling prediction of when problems might occur.

This unique solution combines data, simulation and financial information to improve operation and maintenance of equipment and systems in a wide variety of industries.

Digital Twin
ansys.com/digitaltwin

Groundbreaking Integrated Solution for Design at the Speed of Thought

**Robotics & Automation News, June 2018**

ANSYS and PTC have partnered to deliver ANSYS Discovery Live real-time simulation within PTC's Creo® 3D CAD software. The combined solution will be sold by PTC as part of the Creo product suite. This solution offers customers a unified modeling and simulation environment, removing the boundaries between CAD and simulation, and enabling design engineers to gain insight into each of the many design decisions they make throughout the product development process. Design engineers will be empowered to create higher-quality products, while reducing product and development costs.
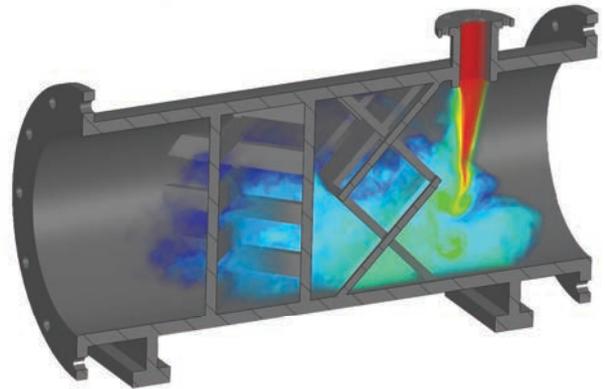
The collaboration between ANSYS, the leader in engineering simulation, and PTC, the leader in 3D CAD, leverages the companies' respective technology strengths and market presence. ANSYS developed

"This capability has the potential to dramatically *improve engineering productivity* and quality, and the combined solution can be a differentiator in the market."

— Jim Heppelman, president and CEO, PTC
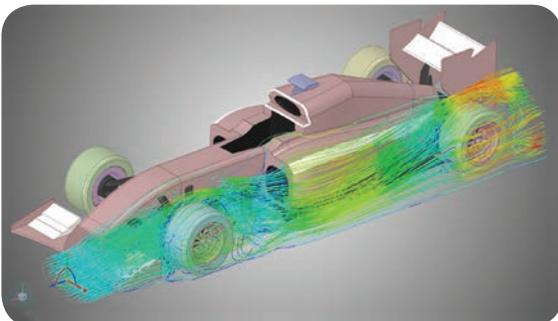
its groundbreaking, real-time simulation solution, ANSYS Discovery Live, to further its strategy of pervasive engineering simulation. This combined solution will give designers the power of Creo, the award-winning 3D CAD solution from PTC, fully integrated with ANSYS Discovery Live. The integration of these two leading solutions brings real-time simulation into the modeling environment, creating an interactive design experience.

ANSYS Discovery Live
ansys.com/discovery