Simulation in the News

WHEN TWO PLUS TWO MAKES MORE THAN FOUR

Desktop Engineering
deskeng.com, September 2012

Traditional simulation packages are being extended — not only to help different disciplines work with the same models, but to share the results across higher-level collaborations. This roundup of interviews — which includes Barry Christenson from ANSYS — underscores the concept that "better, faster, cheaper" is today's norm. Christenson notes, "Working with the multiphysics aspects of a single electronic chip, though complicated, is not a systems or multidisciplinary point of view. However, making sure that structural, hydraulic, electromagnetic interference and airflow design requirements are met for an aircraft design definitely qualifies as the latter."

ANTENNA AIMS AT DUAL BANDS

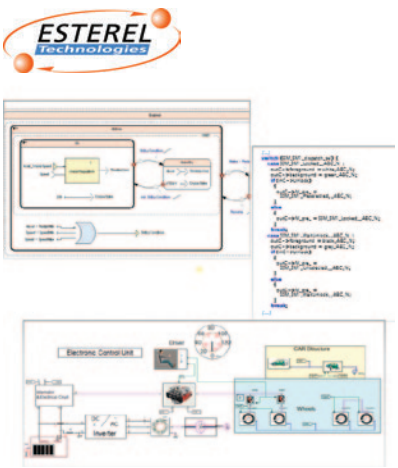
Microwaves & RF
mwrf.com, October 2012

Antennas are critical components in WLAN and other wireless systems. Researchers at Xidian University leveraged ANSYS software to realize effective designs for such applications. The team used a modified ground structure (MGS) to achieve dual-band operation. The antenna design exhibits a monopole-like radiation pattern and acceptable peak gains across the operation bands.

ANSYS 14.5 ENABLES DEEPER DESIGN INSIGHT

ansys.com, November 2012

Technology enhancements in ANSYS 14.5 deliver engineering productivity and innovation through unprecedented multiphysics analysis and HPC capabilities. The recently released version delivers many new and critical solutions, enhancements to pre-processing and meshing capabilities, and a new parametric high-performance computing licensing model to make design exploration more scalable. ANSYS 14.5 extends the advancements delivered in 14.0 and provides a great number of new and advanced features that deliver solutions for customers to amplify their engineering effectiveness, simulate their most complex engineered products and accelerate the time to market for their products.



▲ With the integration of ANSYS subsidiary Esterel Technologies' SCADE Suite with ANSYS Simplorer in version 14.5, users can virtually validate power electronic and mechatronic systems by simulating embedded software with the hardware, including electrical, mechanical and fluidic subsystems.

DRIVETRAIN EFFICIENCY OF BIG TRUCKS TARGETED

Automotive Engineering International
sae.org, October 2012

A UK Energy Technologies Institute (ETI) project expects to boost fuel efficiency of large trucks by cutting in half the amount of parasitic losses that occur in their lower drivetrain systems. These losses, related to lubricating oil agitation and component friction, together can account for more than a tenth of overall vehicle energy losses. The consortium's Chris Thorne, program manager for heavy-duty vehicles, said, "We want to get the consulting parties — specialists in engineering (Romax), modeling (ANSYS) and lubrication (Castrol) — around the same table to co-engineer a general solution in an environment where the normal business-related constraints have been removed."

DOORS OPEN TO INNOVATION

Business & Gentlemen
businessgentlemen.it, January 2013

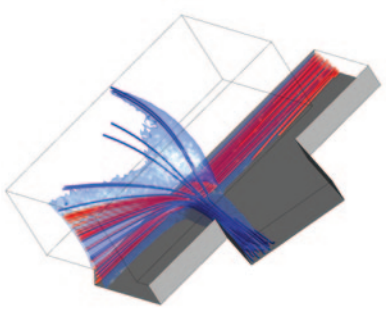
Electrolux discusses the importance of simulation in creating new business opportunities. The company works with suppliers to incorporate virtual analysis into business routines while conveying the importance of simulation as a design tool. Collaborating with ANSYS, Electrolux developed the initiative Innovate to Compete, which is part of a plan to create a network of people with the desire to build innovation by leveraging the synergies with new partners.

FLORENCE TAV RAILWAY STATION: EXTRAORDINARY DESIGN

Railway Strategies
railwaystrategies.co.uk, September 2012

Architectural firm NInsight studies and modifies architectural designs and building materials in a virtual environment.

One of its latest projects is the Florence TAV railway station, an innovative structure that is already being hailed for unique features, such as a dramatic arching roof. The roof is problematic from an engineering perspective, so the firm applied ANSYS software to address its performance under different rainfall and drainage situations, the erosion patterns of its many glass surfaces, and the effects of falling rainwater on pedestrian safety. The structure is expected to be completed in 2016.



FINITE ELEMENT ANALYSIS SAILS INTO THE MAINSTREAM

Manufacturing Engineering
sme.org, December 2012

Improvements in finite element analysis (FEA) software are speeding up engineering analysis. In biomedical applications, combined FEA–CFD solutions provide systems answers that are critical to projects like modeling how pacemakers interact with the heart and the overall cardiovascular system. "When you manufacture a part, you don't just run a simulation once," said Thierry Marchal of ANSYS. "Each time, you need to rerun the simulation. With a full 3-D model, you want to run that very effectively. With a systems approach, this type of modeling can be done very quickly."

When you manufacture a part, you don't just run a simulation once.

– Thierry Marchal, Director, Industry Marketing for Healthcare, ANSYS

A FUTURE WITH DRIVERLESS VEHICLES REQUIRES SENSORY ADJUSTMENTS

Desktop Engineering
deskeng.com, October 2012

In the future, cars may become self-driven. "A driverless car must have a good understanding of, and must keep track of, the positions of nearby objects. One of the technologies that enable a car to do that is radar," said Sandeep Sovani of ANSYS. "That's all about antenna design." The greater challenge is to go beyond simulating simply radars and onboard devices and simulate the entire car as an interconnected system.

Go beyond simulating simply radars and onboard devices and simulate the entire car as an interconnected system.

– Sandeep Sovani, Manager of Global Automotive Strategy, ANSYS

ALL HANDS ON DECK

Oil & Gas
europeanoilandgas.co.uk
January 2013

For open-sea environments, aluminum decking is ideal because it is weather resistant, has a high degree of functionality, has a long life, and has low maintenance costs. MB Hydraulikk is a leading designer and producer of lightweight deck equipment. To adhere to strict quality standards, the company uses the latest design software throughout the design process, including ANSYS tools for strength analysis of complex 3-D models.

THERMAL STREAM

KEM
kem.de, January 2013

SGB designs power transformers so that they are highly reliable and durable — and so they minimize load losses. The company uses ANSYS solutions to closely examine thermal distribution. Engineers simulated the magnetic field with ANSYS Maxwell to calculate ohmic resistance; they transferred the losses to ANSYS Workbench for calculating temperature distribution.

THE CURRENT STATE OF MODEL-DRIVEN ENGINEERING

Chip Design Magazine
chipdesignmag.com, December 2012

ANSYS participated in an open forum on model-driven engineering, approaching the challenge from an electronics point of view. Many component companies are moving up the supply chain to create subsystems, including embedded hardware and software. Today, most analyses are set up and performed by a few experts with Ph.D.s — which can become a bottleneck, since a systems-level model must be simple enough for all engineers to use. "There needs to be a democratization of simulation to the engineering masses," said Andy Byers of ANSYS.