



## TAKING FLIGHT

### Aerospace and defense leaders rely on engineering simulation to get their innovative ideas off the ground.

By **Sin Min Yap**, Vice President  
Industry Strategy and Marketing  
ANSYS, Inc.

**A**s you will learn in the overview by Aerospace and Defense (A&D) Industry Director Rob Harwood, this sector currently faces many diverse challenges. The A&D industry is under intense fiscal pressure amid sharp defense spending cuts. Consequently, product innovation has become a key driver of growth and profit — whether applied to reducing fuel-burn costs, meeting defense department affordability goals, or dramatically lowering the cost of spaceflight, for example.

form the industry — without investing in extensive physical prototyping or wind tunnel tests.

For more than four decades, ANSYS has been helping the industry's public and private-sector leaders to accomplish their most ambitious engineering goals via simulation. Today, ANSYS customers include the top five aircraft manufacturers, the top 10 defense contractors, the top 10 space agencies, and the top eight electronics manufacturers in aerospace and defense worldwide.

In working with these industry pacesetters, ANSYS has gained deep and

modeling and simulation industry, to the entire hardware and software system.

Whether organizations are exploring the use of advanced composites materials, developing innovative phased array antennas, or creating radical engine redesigns that incorporate new fuels and combustion processes, today their challenge is really to re-invent an entire industry.

On the beach at Kitty Hawk in 1900, Wilbur and Orville Wright could not have anticipated that, someday, an unmanned aircraft would touch down on a distant planet. Similarly, none of us can truly forecast what the future of the A&D industry will look like. At ANSYS, we are excited to be part of that future, and we will continue to invest in the solutions that engineers need to accomplish the next great industry and product development transformation. ▲

## How can aerospace and defense leaders create mind-boggling innovations in a deflationary profit-margin environment?

A question we often ask ourselves at ANSYS is, “How can aerospace and defense leaders create mind-boggling innovations in a deflationary profit-margin environment?” Engineering simulation provides the solution. By developing and testing designs in a risk-free, cost-effective virtual world early in the product development cycle, A&D engineers can explore the effects of the most complex physical phenomena on unique product designs. They can imagine, create, optimize and evaluate multiple design alternatives for engines, wings, radar systems and other components that have the power to trans-

unique insights that guide the development of our modeling and simulation solutions, ensuring that they deliver capabilities that support industry best practices for product development process improvements that directly impact A&D companies' business initiatives. These capabilities span structural mechanics, fluid dynamics, electromagnetics, and, with the recent acquisitions of Apache and Esterel, power/thermal management and embedded software code validation (respectively). The depth and breadth of our technology provides solutions not just to discrete components but, unique in the

