



## Terrafugia's "Roadable Aircraft" Engineered with Virtual Prototyping from ANSYS

### *Historic Vehicle Optimized for Flight and Driving with Minimal Physical Testing*

PITTSBURGH, Jul 27, 2010 (BUSINESS WIRE) -- The world's first commercial "flying car" will go the distance on both highways and runways next year when it rolls off the production line -- thanks, in part, to design optimization from [ANSYS](#) (NASDAQ: ANSS).

Massachusetts-based Terrafugia used ANSYS<sup>(R)</sup> engineering simulation software to design and verify its new production prototype of the Transition<sup>(R)</sup> aircraft that also can drive on the highway, which was unveiled yesterday at the EAA AirVenture airshow. Terrafugia engineers conducted whole-vehicle airflow tests that assessed the effects of design changes on overall performance -- working in parallel across the various Transition components. The simulations were used to maximize wing lift in the air and to minimize the effects of crosswinds along the road.

"The Transition's test flights identified some important engineering issues that ANSYS fluid dynamics software helped us to address in the production prototype," said Gregor Cadman, an engineer at Terrafugia. "Our latest design improves both the in-air and on-road performance of the Transition, as well as ensures that the vehicle lends itself to full-scale manufacturing. Simulation software from ANSYS played a central role in these engineering efforts. Without the ability to work in a virtual environment, we would have had to construct complicated physical models, modify or rebuild them, and conduct hours of real-world testing, slowing down the process and adding significantly to development costs."

The Transition is the world's first vehicle to combine a lightweight, aerodynamic aircraft with the stability needed for long-distance driving on the highway. The vehicle can cruise up to 490 miles at over 105 miles per hour, can drive at highway speeds on the road, and is capable of transforming from plane to car in less than 30 seconds. The sophisticated design features foldable wings that span more than 26 feet, a rear-wheel-drive system for the road and a propeller for flight. Terrafugia's team of aeronautical engineers earned global attention when the Transition proof-of-concept vehicle completed a successful 60-second test flight in March 2009. The company expects to begin commercial production of the vehicle in 2011.

Working closely with ANSYS product specialists, the Terrafugia engineering team also studied the impact of the Transition's propeller on air flows around the vehicle. As the project developed over time, engineers applied simulation tools to study ever-smaller and more precise design modifications, which added to their confidence that the Transition will perform well in flight testing.

"The dual challenges of driving and flying present significant challenges for aeronautical engineers," said Greg Stuckert, [aerospace industry](#) manager at ANSYS. "Terrafugia's use of engineering simulation to fine-tune designs throughout the development process -- not just at the end for verification -- contributed to an optimized historic vehicle and an efficient product launch. Their earlier successful test flights and this year's production prototype are the proof that their efforts are paying off."

For downloadable images, visit [www.ansys.com/newsimages](http://www.ansys.com/newsimages).

### **About Terrafugia**

Terrafugia, Inc. (pronounced ter-ra-FOO-gee-ah) is the developer of the first street-legal airplane which pilots can fly between local airports and drive on any road. The start-up company has received worldwide media attention, including coverage by *Forbes*, *Fortune*, CNN, CBS and Fox News. Based in Woburn, Massachusetts, U.S.A., the company is composed of a team of award-winning engineers who have been advancing the state of personal aircraft since 2006. Founded by five pilots who are graduates of the Massachusetts Institute of Technology (MIT) and supported by a world-class network of advisors and private investors, Terrafugia's mission is the innovative expansion of personal mobility. Learn more at [www.terrafugia.com](http://www.terrafugia.com).