

Boeing Announces Partners for Fuel Cell Demonstrator Airplane Project

Boeing Announces Partners for Fuel Cell Demonstrator Airplane Project

Boeing today announced its partners for a demonstrator airplane project aimed at exploring the use of fuel cell technology for future aerospace applications. The research project, led by the Boeing Research and Technology Center in Madrid, Spain, includes Intelligent Energy (UK), Diamond Aircraft Industries (Austria), the Spanish companies Sener and Aerlyper, and Advanced Technology Products (ATP), from the United States.

The project will evaluate the potential application of fuel cell technology -- which is cleaner, quieter and more efficient than current gas turbine technology -- for future commercial airplane products. As part of the evaluation, the project will develop and flight-demonstrate an electric-motor-driven airplane powered by fuel cells.

With respect to the five partners collaborating in the project, Diamond Aircraft of Austria will supply the demonstrator airplane, based on a certified Katana Xtreme motor-glider (in Europe called the Super Dimona); Intelligent Energy of the United Kingdom will provide the Proton Exchange Membrane fuel cell hardware and technical support; Sener will design and build a fuel cell controller unit to be used in research activities; Aerlyper will integrate the electric motor into the airplane and perform airframe modification work; and ATP will supply the motor, batteries, and controllers to complete the electric propulsion system, and perform the flight testing of the airplane.

"Boeing will collaborate with these companies to investigate the integration of fuel cells into aerospace vehicles, a potential new field of application, which promises to reduce emissions while increasing the efficiency of electrical power generation," said Miguel Hernán, managing director of the Madrid Center. "Research into environmentally acceptable technologies is a key focus for the Center's work in Europe."

In addition to the five partners involved, two Spanish universities will also collaborate in this project. The Polytechnic University of Madrid will test a sub-scale version of the fuel cells that will power the demonstrator airplane and the Polytechnic University of Catalonia will work to understand the possible failure modes of this completely new form of airborne electrical power generation.

Work to integrate the fuel cells into the demonstrator airframe is expected to begin at the end of summer 2003. This would enable a possible flight test in late 2004 or early 2005. While test results are not expected to allow for any near-term applications of the new technology to production aircraft, they are expected to contribute to the eventual use of this technology in aircraft to provide cleaner, more efficient performance.

In addition to being inherently cleaner and quieter than current technology gas turbines, fuel cells can generate approximately twice as much electricity from the same amount of fuel. Unlike a battery, which needs to be recharged, fuel cells keep working as long as the fuel lasts. While fuel cells and electric motors will not replace jet engines, they could potentially replace gas turbine auxiliary power units, which provide electricity and air for airplane systems.

The Madrid Research and Technology Center, which is part of the Boeing Phantom Works advanced R&D unit, was opened in July 2002 to serve as a center of excellence in environmental, safety and reliability and air traffic control technologies. Because Spain in particular and Europe in general have demonstrated strong interest and results in these areas, the Boeing R&T Center plans to collaborate with industries, academia and other research centers across Europe to advance technology development in these areas.

###

C1989

For further information:
David Phillips (Chicago)

312-371-7595
Mary Jean Olsen (Seattle)

425-234-0901
Chantal Dorange (Madrid)

34-91-426-4040
