

## **Boeing Celebrates Opening of New Research and Technology Center in Madrid**

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Minister of Science and Technology hails new center, which announced new collaborative projects with Spanish industry and academia

At a ceremony in Madrid today, the Minister of Science and Technology for Spain, Anna Birulés, helped celebrate the official opening of the new Boeing Research and Technology Center there, along with Boeing Phantom Works president George Muellner and a host of other Spanish and Boeing officials. In the process, Boeing announced new collaborative projects with the Sener engineering firm and the Polytechnic Universities of Madrid and Barcelona.

The Boeing Company [NYSE: BA] announced its intention to open this R&T Center just over a year ago. Directed and operated by Spanish nationals, the center is the first facility of its kind Boeing has opened outside the United States, and will serve as a center of excellence in environmental, safety and reliability, and air traffic control technologies. It plans to work closely with industries, academia and other research centers in Spain and the rest of Europe in these areas.

"We are proud to be opening this new R&T Center in Madrid and look forward to establishing strong new partnerships in Spain and Europe to work in these important areas of technology," Muellner said. "Working together, we can help define the future of aerospace and create a better world."

Opening the R&T Center is part of Boeing's initiative to transform itself into a truly global enterprise, with a stronger local presence in countries around the world. In addition to opening the center in Madrid, Boeing has also appointed an international vice president for Spain, Pedro Argüelles, who also attended the ceremony along with Alberto Ruiz-Gallardon, president of Madrid, and Luis Blazquez, economic and industrial counselor for Madrid.

"With the opening of the new research center, Boeing is making a double commitment," said Minister of Science and Technology Anna Birulés. "One is to Spain as a key European country with the ability to make innovative technological contributions to the aerospace industry. The other is to the improvement of the quality of life of the people of the world by trying to define new products that are safer and more environmentally friendly."

The Boeing R&T Center of Madrid is part of the Boeing Phantom Works, the advanced research and development arm of the company. Serving as a catalyst of innovation for the enterprise, Phantom Works collaborates with its various internal and external customers to develop advanced system solutions and breakthrough technologies for improving the quality, performance and affordability of aerospace products and services.

## **Center Announces New Research Projects**

The center, located near Madrid's Barajas International airport, is directed by Dr. Miguel A. Hernan, one of Spain's leading aeronautical experts. Hernan plans to employ about 30 engineers and scientists from Spain and Europe by the end of this year. With his current staff, he is already actively involved in two new research projects and is promoting several cooperative opportunities with R&D institutes, Universities and European industries.

One new project announced by Hernan is under the Ministry of Science and Technology in collaboration with the Sener engineering firm. Named "Preliminary design of the control system of the fuel cell electrically powered demonstrator," the project is concerned with the development of fuel cells to replace gas turbine auxiliary power units in airplanes.

Since fuel cells are inherently cleaner and quieter than auxiliary power units, have fewer moving parts, and can generate more than twice as much electricity with the same amount of fuel, they can help make commercial airliners more fuel efficient and environmentally friendly. They also have potential application to small, unmanned air vehicles. Accordingly, fuel cell technology is of interest to the National Program of Aeronautics/Strategic Action Over Advanced Aeronautical Systems.

The second new project, which aims at the development of noise alleviation technologies, is in cooperation with the National Aerospace Laboratory (NLR) of The Netherlands, the Madrid Polytechnic University and Barcelona Polytechnic University. The R&T Center is currently conducting a phased array noise study at the Amsterdam Airport Schiphol, the results of which it will pass on to the universities and NLR for analysis. The results of this study could lead to new design strategies for reducing airplane noise, as well as other air traffic management measures to reduce noise in areas close to airports.

The Boeing Research and Technology Center is also currently exploring potential collaborative relationships with a variety of other Spanish and European companies and institutions on projects relevant to the VI Framework Program of the European Union. In addition, the R&T Center is actively supporting some of the proposals led by

AENA (Aeropuertos Espanoles y Navegacion Aerea) related to the study of advanced air-traffic navigation concepts for Europe.

The Boeing Company [www.boeing.com](http://www.boeing.com), with headquarters in Chicago, is the largest aerospace company in the world and the United States' leading exporter. It is the world's largest manufacturer of commercial jetliners and military aircraft, and the largest NASA contractor. The company's capabilities in aerospace also include rotorcraft, electronic and defense systems, launch vehicles, and advanced information and communication systems. The company has an extensive global reach, with customers in 145 countries and manufacturing operations throughout the United States, Canada and Australia. Boeing and its subsidiaries employ approximately 173,000 people. Total company revenues for 2001 were \$58 billion.

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