



Wind and Renewable Energy: New Paradigm in Wind Turbine Blade Inspection

March 31st, 2014 | REVE

These enormous wind turbine blades are structures that are subject to a lot of wear and tear.

Storms, particles carried by the wind, temperature changes, and radiation are some of the factors that cause damage to these enormous structures. Timely diagnosis and repair are essential in order to avoid severe deterioration that can result in elevated costs and longer periods of unproductive downtime.

The recent Iberdrola presentation of the new aerial inspection system of wind turbine blades, centered around the EOL 6.3 aircraft, is designed and made piece by piece in Villamayor, Salamanca by the company Arbórea Intellbird along with its software Web Blade. The system enables the user to automatically create damage reports. The system has started to have an impact in the wind energy sector.

EWEA, the largest international wind energy fair –which took place in Barcelona this year –was the setting chosen to introduce the system, along with other advances in the Wind Energy Industry, which is an economic motor for thousands of jobs in Europe.

Leaders of the largest companies in the sector exchange projects, developments, and business opportunities were there. In the whirlwind that is the wind energy sector— a sector in which Spain has been a pioneer and in which exceptional Spanish companies maintain leadership—the Aracnocóptero EOL 6.3 aircraft (a technological product exclusively from Castile and León) was the clear standout at the Iberdrola booth. This company participates, along with CDTI, in the Salamanca-based firm Arbórea, recently nominated as an outstanding Castilian-León company for the Current State of Economics' awards.

The new, specialised, Aracnocóptero model, made of carbon fibre and titanium, has generated renewed interest in the maintenance and wind turbine blade manufacturers all around the world. This cutting-edge system of blade inspection allows for the automatic generation of reports and a complete mapping of these enormous structures, which can exceed 75 metres in length and can be located on the earth or in the sea. The EOL 6.3 provides information about damages smaller than 2 millimetres and allow for a significant reduction in wind turbine idle-time and the related risks and costs of the traditional procedures and analysis. Iberdrola and Arbórea have performed demonstrations of the system in EWEA under harsh wind conditions. After the demonstration, special training took place in the University of Salamanca Science Park in order to prepare the large wind energy companies. The second course imparted by Arbórea was conducted by teachers from Iberdrola and also from the Matacán Group of Air Force Schools, a prestigious entity with more than 75 years of experience in training, which equips pilots with the necessary knowledge to handle unmanned military systems. Arbórea and the Airforce's RPAS school actively collaborate on civil and military training initiatives through specific agreements.

Among the participating companies in the wind energy sector include: Acciona, Alstom, Altertec/Grupo Enerpal, Nesys, Salvoravento and Comantur; the course also hosted Latin American countries that will implement the system in their respective nations. The development of the Aracnocóptero platform, which began in 2009, has brought together the University of Salamanca with many of the large companies and institutions, such as: ADE Castile and León, Gamesa, LM WindPower, Aeroblade, CENER, Grupo Antolín, and the Castile and León Association of Family Business. These companies have supplied the facilities for the trials, technical guidance, and training support in diverse subjects in order to make possible this exciting and innovative project, based in our region but geared towards the wind turbines all over the world. Through an investment by the Perseo group, Iberdrola demonstrates its clear faith in Spanish innovation and technology in strategic sectors, launching and accelerating outstanding business projects and products like that of the Salamanca-based company Arbórea Intellbird.

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