

A company of the USAL Science Park creates an 'Aracnóptero' to inspect the blades in wind farms

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The company 'Arbórea', of the Scientific Park of the University of Salamanca (USAL), in Villamayor, after four years of intense I+D+I activity, has created the first model of 'Aracnóptero', an unmanned aircraft shaped spider and vertical take-off that can be a revolution in the international wind sector and whose purpose is to detect possible damage to the blades of wind turbines.

Its versatility allows multiple civil and military uses. It is an example of close collaboration between university and company presented to the public for the first time at a OTAN symposium in September 2011, sources from the driving company informed Europa Press.

This merchant, from the USAL Science Park, has brought together a growing multidisciplinary team of experts among which are technologists of various specialties, military experts, mechanical and software engineers, leading international researchers of the Bisite Group of said Salamanca academic institution and even experts in social behaviour of birds, since the platform Aracnóptero works extrapolating the communication strategies of social species to the artificial intelligence of aircraft swarms.

The incorporation to the project of companies of the wind sector, one of the industries in which our country stands out, has allowed the development of a specific and absolutely innovative model in the market specifically aimed at the complex inspection of wind turbine blades.

AEROSPACE MATERIAL

Constructed of aerospace materials, such as carbon fiber and titanium, the Aracnóptero is foldable and lightweight. The Eol6 model fits in the trunk of any vehicle, so it does not require special logistics.

It is accompanied by a state-of-the-art stabilized camera system that allows you to shoot and photograph in high resolution, simultaneously obtaining static images and video of the damage of the blade with great precision.

All this camera control is guided from the ground where images are received in real time that allow the aircraft and cameras to be directed towards the damaged points of the blade.

The aircraft is extremely simple to use since it is self-stable and carries various automatic protection systems. Own software makes it easier to take inspection data saving operators a lot of time.

The company Arbórea, offers specific training, technical assistance, quick workshop and replacement aircraft to its customers from its facilities in the USAL Science Park

For its part, the company Altermec Renovables Grupo Enerpal provides a practical application dimension to the project by betting on this technology for the development of its wind turbine maintenance activity throughout the world.

These large structures are subject to the erosion of the elements, wear and fatigue due to the strong tensions to which the wind subjects them. Small damages not detected in time generate significant repair costs and potential disasters. Current inspection systems entail high costs of human and logistic resources and involve large periods of unproductive shutdown of generators.

COST REDUCTION

The Aracnóptero EOL6 makes it possible to reduce inspection costs by more than 90% compared to the most widespread systems currently in use, based on the use of cranes or systems for lifting operators with ropes through the blades.

The inspection systems currently in force detect a remarkable stoppage time of the wind turbine, which implies production losses. On the other hand, the Aracnóptero is a revolution since its use reduces the average downtimes of a wind turbine from six hours to half an hour.

Its use in blade inspection is being very well received by the strategic sectors of this renewable energy production industry. Maintenance companies see their tasks facilitated; wind farm promoters can ensure efficient inspection at a lower cost, without noticeable production losses; insurance companies are guaranteed a good inspection procedure that avoids costly disasters and, more importantly, operators no longer have to hang on ropes or crane baskets rocked by the wind hanging more than 100 meters from the ground.

The Eol 6 model can also carry out inspection work in wind conditions superior to those of the current procedures.

[Link to original](#) (Europapress, Spanish)