



## &gt; ESPECIAL USAL PARQUE CIENTÍFICO



The Aracnocóptero drone, manufactured in the Scientific Park of the University of Salamanca, performs a digital inspection on a wind turbine. ARBÓREA INTELLBIRD

## &gt; SALAMANCA

# Synergy between technologies

Arborea Intellbird is a pioneer Salamanca company in the digitalization of inspections of wind turbines or power lines/ Works on projects in Spain, Mexico and Japan.

Some authors cite a volume of almost one million manuscripts housed in the mythical library of Alexandria, in its most flourishing time. In this enclave was located 2000 years ago the mecca of human knowledge, in which very few lucky ones could be enlightened. Today a not inconsiderable proportion of the planet's population carries a device in its pocket capable of giving instant access to a dizzying growing number of books and technical documents available. Their number multiplies by far the assets of the mythical library of the Ptolemaic era. Universal and instant access to knowledge projects us to what might resemble a new Renaissance.

All this has been possible thanks to the great evolution experienced by microprocessor technology. Its transformation into an object of great consumption, has favored its miniaturization, continuous improvement and cheapening. The repercussions of this evolution of silicon management already allow a pocket supercomputing, which is also being applied to the robotization of our environment, aided by increasingly wide channels of digital communication. The internet of things extends to cover the objects of our daily lives. The management and analysis of huge

masses of data are accelerated with the help of artificial neural networks, capable of learning and generating increasingly intelligent responses.

Everyday technological reality is transforming into something that exceeds written science fiction not so long ago. In 1989 Dan Simmons recreated in his book *Hyperion* a distant future in which mankind would communicate by means of a wireless and portable device capable of transmitting video and voice which he baptized as *Comlog*. Today's powerful microprocessors have allowed us to go much further. Just check out the growing list of applications available for a simple mobile phone. The processing capacity of these today far surpasses the capacity of the great computers that made it possible at the time to take the first man to the moon.

The vertiginous advances and synergies that arise between this availability of information, through instant communication channels and the technological outbreak, have created a new scenario conducive to ideas, projects and therefore also to the emergence of companies that develop it. Today's small innovative companies do not normally require an excessively expensive structure and provide a dynamic productive fabric, which

is generating wealth in the form of jobs in Castilla y León. Just as the sum of some peculiar environmental factors allowed life to explode in the primeval seas of our world, in the Cambrian, 500 million years ago, today there is the right breeding ground for the generation of disruptive initiatives provided by small businesses innovative. The Science Park of the University of

Salamanca is a good example in which the essence of this process can be contemplated. From Arborea Intellbird, one of the pioneer companies in this structure, it has actively participated in this evolution.

The technological advance described is clearly based on electrification processes. Transport will be added to this electrification soon, which will increase demand. It seems important to move towards an increasingly sustainable production of this electricity. The infrastructures for producing clean energy that are growing the most at the present

## THE FALCONER THAT CONNECTED WITH THE ENTREPRENEURSHIP

**Entrepreneur since his youth.** Carlos Bernabéu founded his first wildlife management company before finishing his Biology degree at the University of Salamanca. President and founder of Arborea Intellbird, a company that is part of the Science Park of the University of Salamanca. Responsible for the development of the Aracnocóptero platform since 2008. This remotely piloted air system, manufactured in Salamanca, has obtained the CAE airworthiness certificate from the Ministry of Defence through INTA.

time are wind and photovoltaic. In both tends towards the gigantism of structures. This poses operational and maintenance challenges that grow along with the size of the blades or the area planted with huge solar gardens. The optimization of inspection and repair work with a predictive character is one of the keys to this evolution. In fact, the digitalization and automatism of these processes begins to be profiled as something essential to enable massively supported electrification in structures that generate renewable energy. This is the work field of Arborea

Intellbird. The innovation provided by the young team of Salamanca engineers, creators of the Aracnocóptero drone, is allowing digitalization of inspections of wind turbines or power lines. Their flight guarantees safety on the blades of the wind turbines in many different countries, such as Spain, Mexico or even some as far away as Japan, to name a few examples. This small company in which Iberdrola was integrated, the Spanish State through CDTI and the investment structure of Empresa Familiar de Castilla y León Alentia, generates services to the main clean energy multinationals. Boosting intelligent digital processing increases efficiency and safety in large production infrastructures, while reducing their operation and maintenance costs. In this way, it is betting on an acceleration in the expansion of renewable generation, as a way towards sustainability.

A sample of the latest Arborea Intellbird developments in both aircraft and associated software were recently presented at Iberdrola's Innoday past with a great reception.