

## The robot Antecursor I sends its scans in real time anywhere in the world.

- Iberdrola and Arbórea present in Zamora this revolutionary inspection system that improves efficiency by achieving automatic and digital predictive maintenance of electrical infrastructures.
- This android bases its automatic movement through the installations on a unique process patented by the Salamanca-based technology company, inspired by the hunting strategies of the genet, the nocturnal creature that inhabits our holm oak forests, capable of moving with precision in the dark.
- This more comprehensive analysis has been applied in a new way to transformer substations, offering greater traceability and worker safety - The technology allows damage assessment without the need for field visits, resulting in greater efficiency and a significant reduction in costs and CO2 emissions.

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Iberdrola and Arbórea Intellbird, the creator of Arachnocopter, presented at the El Torrao substation the robot Antecursor I\*, capable of sending its scans in real time to any part of the world thanks to the 5G network.

This robot is a revolutionary inspection system that improves efficiency by achieving automatic and digital predictive maintenance of electrical infrastructures, applied in a novel way to transformer substations, offering greater traceability and worker safety.

Arbórea Intellbird was promoted by Iberdrola through its Perseo fund for eight years with the aim of promoting its development and consolidating it in the sector. On this occasion, the company has gone a step further and has developed this platform for the autonomous inspection of substations, based on a robot and analysis software.

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The robot automatically captures data from all the critical structures of the substation, thanks to high-resolution visible and thermographic image sensors, and sends it in real time via Orange's 5G network to the "virtual control tower", located in Arbórea's facilities in the Science Park of the University of Salamanca.

Once there, this data is processed to build a digital twin and detect, measure and quantify anomalies thanks to the Salamanca software platforms. In addition, the data is sent, also in real time, to various Iberdrola decision centres. The 5G network also makes it possible, if necessary, to take live manual control of the robot - which travels autonomously - in real time.

Autonomous monitoring of a substation makes it possible to detect incipient faults more quickly and efficiently, which is also an advantage in the event of an emergency requiring immediate monitoring. In this way, the technology makes it possible to assess damage without the need to travel to the site, resulting in greater efficiency and a significant reduction in costs and CO2 emissions.

*\*The antecursors were an elite troop created by Caesar to move in advance of the Roman legions and decide the way forward.*

This new process has been the result of combining Iberdrola's experience in the operation and maintenance of the electricity distribution network with the digital inspection procedures and tools of the Salamanca-based company Arbórea.

### Innovation at the service of the energy of tomorrow

The automatic supervision of infrastructures is a line of technological development undertaken more than ten years ago by Arbórea, which is currently focusing its efforts on providing efficient and autonomous inspection systems for large offshore wind farms, which are key to Iberdrola's future growth. The Antecursor I robot for substation inspection will be tested, after the demonstration carried out today in Zamora, in Iberdrola's offshore marine infrastructures.

This development by Arbórea is supported by several patents held by the company, which is very active in the generation of technological intellectual property, mostly based on biomimetic principles. Biomimetic technology is inspired by designs or mechanisms in nature.

In recent years, Arbórea's drones have thoroughly audited more than 4,500 blades at Iberdrola Renovables' onshore wind farms in Spain, Portugal and Mexico. This inspection platform has created digital twins of these thousands of blades, which has considerably reduced Iberdrola's maintenance costs by helping to efficiently discriminate those blades in the worst condition.

### Iberdrola's firm commitment to entrepreneurship

Iberdrola's international start-up programme, PERSEO, aims to facilitate the group's access to the technologies of the future and foster collaboration and the development of a global ecosystem of innovative technology companies in the electricity sector.

Since its creation, PERSEO has invested 90 million euros in start-ups that develop innovative technologies and business models, focusing on those that improve the sustainability of the energy sector through greater electrification and [decarbonisation of the economy](#).

The programme has focused its activities on the analysis of business opportunities and technological collaboration with start-ups and emerging companies around the world, analysing 300 companies each year and creating an ecosystem of almost 7,500 entrepreneurial companies from more than 35 countries.

In addition to investment, through PERSEO, Iberdrola carries out more than 25 real tests of technologies per year, which serve as the first step in establishing a commercial relationship with the start-ups. In addition, in the last two years the group has launched [more than fifteen challenges](#) in which around 1,000 start-ups have participated.