



New robots for PV plant inspections

The Antecursor II robot autonomously inspects upper and lower solar panel structures for thermal anomalies, with more than 30 hours of autonomy.

NOVEMBER 24, 2023 **PILAR SÁNCHEZ MOLINA**

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Image: Arbórea Intellbird

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Arbórea Intellbird – based in Salamanca, Spain – has developed Antecursor II, the world's first autonomous civil robot for inspecting large-scale solar power plants.

Operating globally with the coverage of the Starlink network, the robot relies solely on renewable energy. The 285 kg device, constructed from aerospace alloys, is already operational in Spanish solar plants.

The Antecursor II robot boasts an autonomy of more than 30 hours. Equipped with high-resolution thermographic sensors, it continuously captures thousands of facility measurements per second. These digital data undergo evaluation through Arbórea's patented AI process, a combination of hardware and software.

"It regulates its automatic movement, with centimeter precision, on a process patented by Arbórea inspired by hunting strategies of the genet, a nocturnal predator, capable of moving precisely in the dark," said Arbórea Intellbird.

Arbórea uses the Starlink satellite network to enable real-time monitoring of its robot fleet deployed in remote photovoltaic plants through the patented "Virtual Control Tower." This platform automatically receives real-time information on each robot's system status and alerts related to detected anomalies.

The robot serves two primary functions: autonomously monitoring photovoltaic infrastructure and conducting vegetation clearing. Unlike drones that focus on the upper part of panels, the robot simultaneously examines lower structures, identifying potential risks like clips, fuse holders, staples, or wiring. The system detects anomalies, evaluates

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them based on plant conditions, and promptly alerts technicians to potential failures, preventing fire risks.

The robot also features an integrated vegetation-clearing system made from aeronautical materials, ensuring efficient mulching.

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