

Onesait Grid Eye

Promoting a more sustainable future
for the grid



minsaït

An Indra company

Challenges of distributed networks

Companies that base their activities on distributed networks are constantly facing problems arising from the vast territory covered by their assets.

Surveillance and preventive maintenance tasks for such extensive networks involve the deployment of personnel, drone flights, helicopters and do not guarantee the possibility of occurrence of events and incidents that could have been avoided.

According to the United Nations (FAO), between 340 and 370 million hectares of the planet's surface are burned every year due to forest (or vegetation) fires.

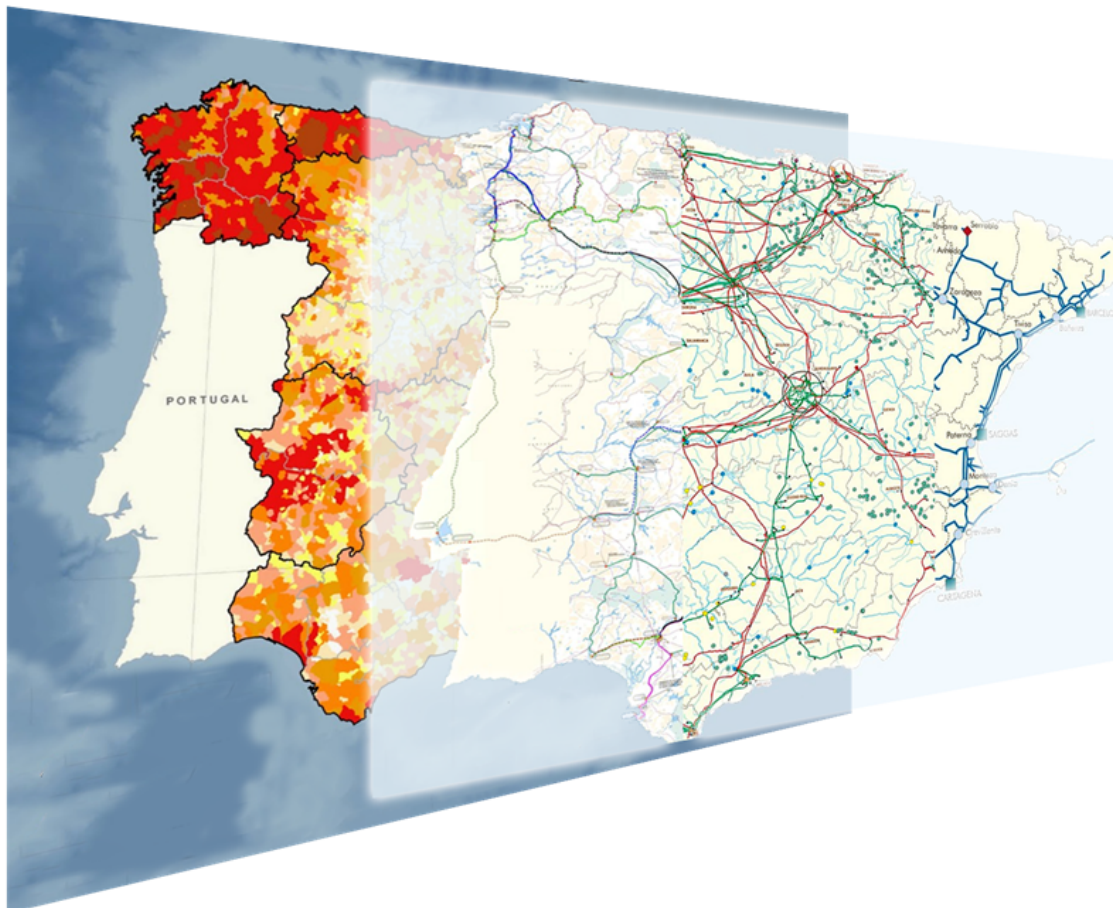
Climate change and land use are projected to increase the frequency of extreme wildfires by up to 14% by 2030, 30% by 2050 and 50% by 2100.

In the utilities sector, fires generate millions of euros in losses, both material and in compensation, and wreak havoc on asset networks. They also disrupt the life cycles of our forests and increase carbon dioxide in the atmosphere, increasing the greenhouse effect and accelerating climate change, which leads to more fires.

Avoiding these situations is a challenge and a responsibility. The fight against climate change on which we embark as a species begins with the anticipation and early detection of fires.

Distribution networks vs. fires

Railroads - Electricity - Natural Gas - etc.

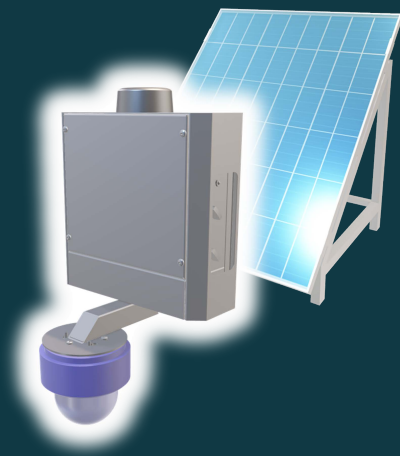


Onesait Grid Eye – HW and SW at the service of autonomous and automated surveillance

Onesait Grid Eye is a compact device that integrates Machine Vision algorithms, sensors and IoT (Internet of Things) connectivity to offer an ecosystem of useful services for any company with distributed assets. .

It allows real-time monitoring of fires, identifies sources of risk and sends alarms for those aspects that are considered to require manual intervention.

Designed to ensure self-sufficiency, minimize consumption and maximize results...



Compact, modular design for easy installation regardless of accessibility



Reduced cost and easily scalable solution



24/7 operation



EDGE processing



Energy self-sufficiency based on solar energy, combined with IoT HW designed for low power consumption

The technology



Artificial Vision processing and **specialized hardware** for image processing through graphical filters and CNN for early detection of events.



2-4 visible spectrum cameras that provide **360° vision at a distance of 2 km**, 1 PTZ mobile camera that allows 360° sweeps with x20 zoom.



Atmospheric sensors: pressure, temperature, air humidity **to reduce false positives.**



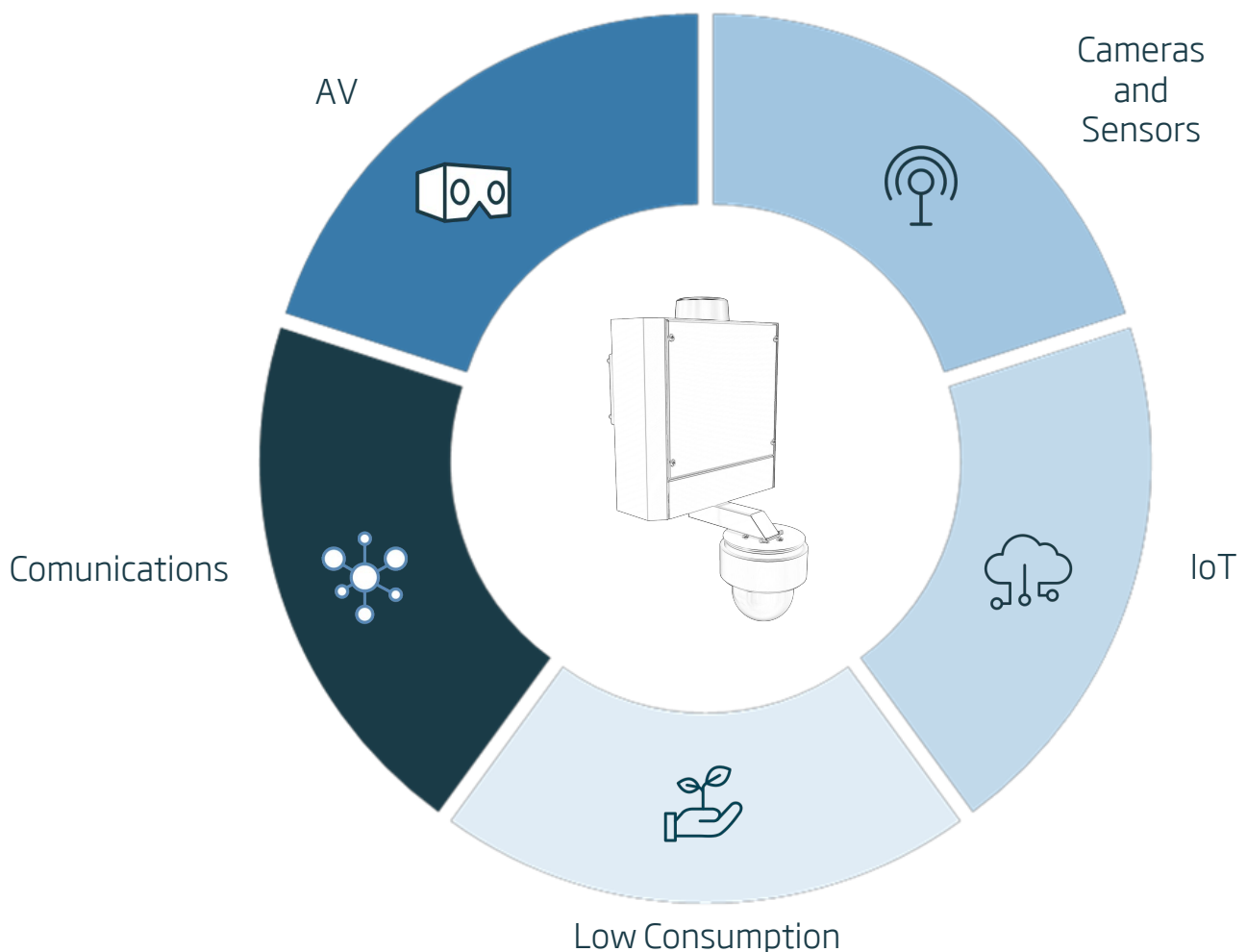
Edge-computing/IoT HW, **edge processing** that minimizes bandwidth and optimizes batteries.



Onesait Grid Eye allows a **wide range of communications:** 2G/3G/4G/GSM/GPRS, as well as the use of LPWAN..



Energy self-sufficiency based on solar energy, combined with IoT HW designed for low power consumption.



Towards the future of maintenance...

Onesait Grid Eye is born to host different AI algorithms, which will enable surveillance and preventive maintenance of large networks.

Branches on lines

Using artificial vision algorithms, the Onesait Grid Eye device inspects the line in order to find woody trunks (tree, branches or bushes) or ice accumulations on the cable, which could affect power supply.

Nest in poles

The objective is to find nest formations of any type of bird and to measure the volume occupied by the nest at the top of the support only. Also, determine if the nest is large enough to be a risk for the line.

Biodiversity Control

The detection and classification of species is presented as a favorable scenario for the application of advanced Machine Vision (MV) techniques, allowing the identification process of existing fauna within the vision area of Onesait Grid Eye.

Work safety

Monitoring of operators and the work area to verify correct compliance with safety standards: mandatory use of personal protective equipment (PPE), fencing of the work area, etc.

Felling and Pruning

By processing the images taken by Onesait Grid Eye along the line and using machine vision algorithms, the system is able to monitor the lines, detecting different vegetation intrusions as well as identifying the easement zone. This allows to detect vegetation on the lines and to know which ones need to be cleared.



Mark Making the way forward

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