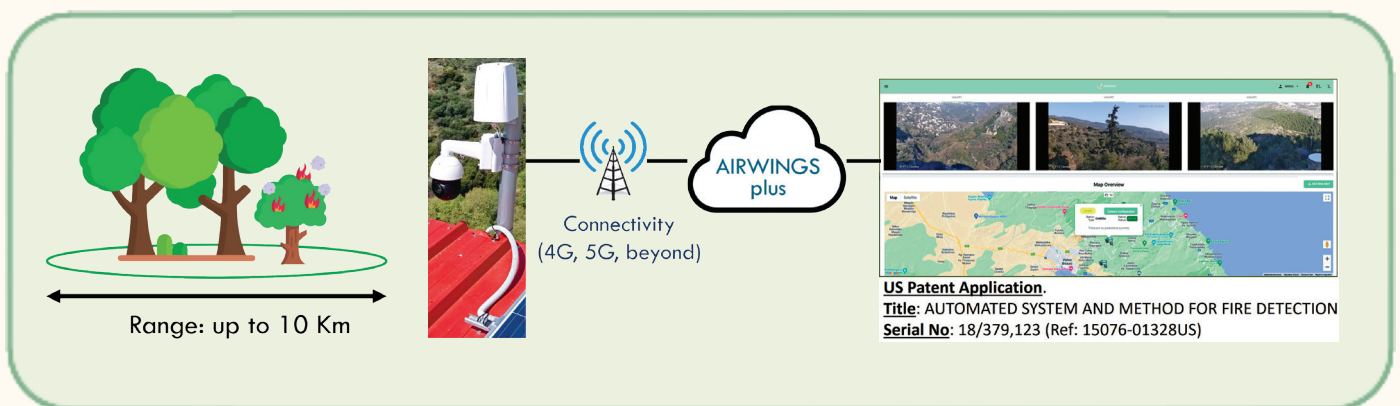## CITIES AND ENVIRONMENT PROTECTION THROUGH EARLY FIRE DETECTION
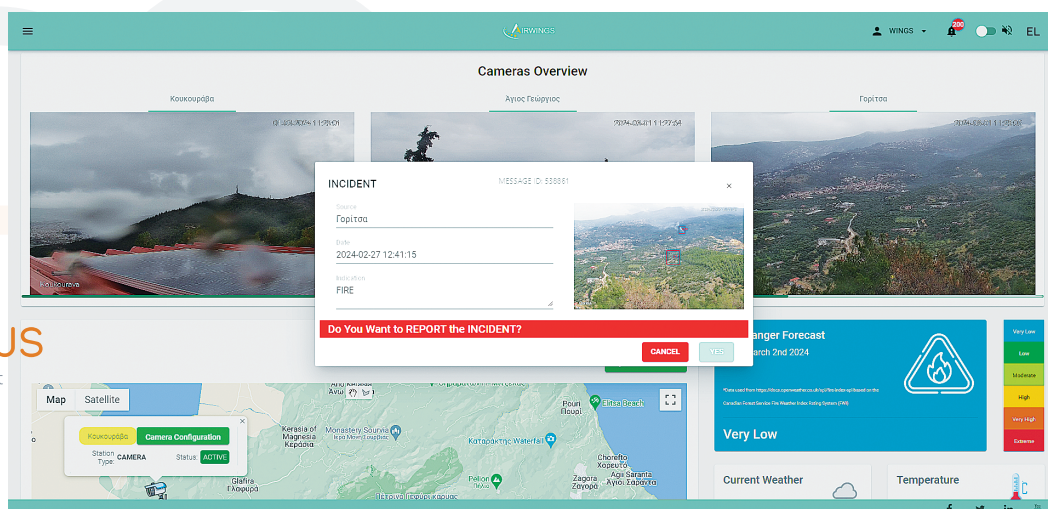
AIRWINGS PLUS

AIRWINGSplus is a comprehensive technology solution, which combines **Internet of Things** (IoT), **Cellular Connectivity** and **Artificial Intelligence** (AI) for the live monitoring, measurement, and management of wildfires.

Range: up to 10 Km

Connectivity (4G, 5G, beyond)

AIRWINGS plus

US Patent Application.
Title: AUTOMATED SYSTEM AND METHOD FOR FIRE DETECTION
Serial No: 18/379,123 (Ref: 15076-01328US)

- Live monitoring and protection of forests - Preventing Megafires.
- Wildfire early warning based on heterogeneous information.
- Alerting of Fire Service (fire extinguishing can be carried out timely).
- Air quality, Smoke, Sun radiation, Cameras, Meteorological, UVA & UVB, Rain Gauge, Solar Irradiance, Wind Speed/Direction sensors.
- Aerial Surveying via state-of-the-art drones.
- Capabilities for ingesting satellite data.
- Wildfire degree of danger rating at micro-scale (scale at the range of 1 km).
- Fire impact monitoring and progress of restoration.

WINGS
ICT SOLUTIONS

AIRWINGS PLUS
Air Quality Management

AIRWINGSPLUS PACKAGE

Hardware / Equipment:
- Hybrid PTZ cameras (Thermal and Visible)
- Air Quality & Meteorological sensors
- 4G / 5G connectivity
- GPU-enabled Cloud infrastructure

Cloud platform / Software:
- Easily deployed in Cloud infrastructures.
- Live monitoring of all camera video streams and sensors' information.
- Adequate storage of historical data.
- Wildfire danger rating at micro-scale (scale at the range of 1 km).
- Fire detection (smoke or flame) within 3 minutes based on AI techniques.
- Notifications / Alerts with all information (photos, sensor data) to administrators in real-time.
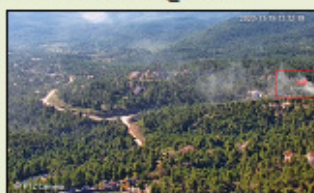- Fire impact monitoring and progress of restoration.
- Simulation for predicting the evolution of the fire.

Artificial Intelligence:
- Deep Neural Network Architecture.
- Model training from real fire simulations.
- Model operation under general and different conditions, lighting, shading and topographic features.
- Model development based on a set of hundreds of thousands of images.
- Utilization of artificial images resulting from augmentation techniques.
- Model training to calculate the location of the potential source.
- Auto-adjustment of algorithm's sensitivity through AI techniques & minimization of false positives.
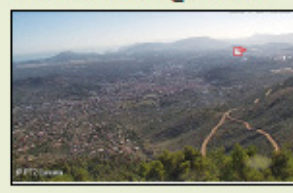
AIRWINGSPLUS EXAMPLES

Fire detection @ 1 km   Fire detection @ 5 km   Fire detection @ 10 km

ABOUT WINGS

WINGS ICT Solutions is an innovative Greek company that focuses on the development of AI-Powered IoT solutions for various vertical sectors (Smart Cities, Utilities, e-Health, Food, Shipping, Logistics, etc.) through advanced Artificial Intelligence, Big Data, Cloud, Wireless Networking and Security technologies.

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