

# EWS

Early Warning System



Wildfire Risk  
Solutions for Spain

# Fire Alert

The Early Warning System uses three sources as fire alerts: 1. AvInFo: wildfire sighting application, 2. satellite thermal signals (EFFIS), and 3. notifications of the fire emergency services.



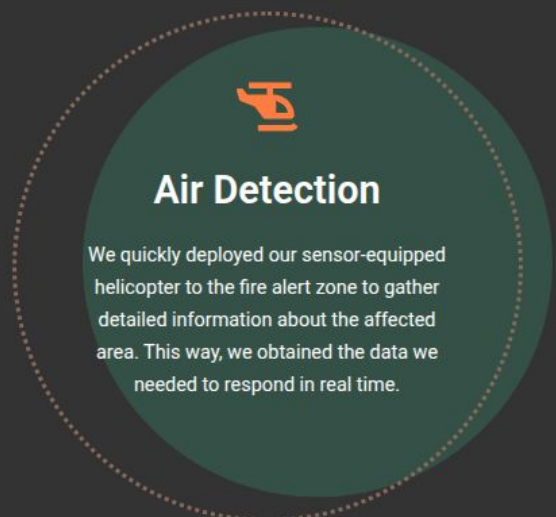
**Fire Alert!**

We've received a fire alert through one of our key sources: the AvInFo app, fire departments, or hotspots identified by EFFIS. Our team is already mobilizing to assess the situation!



# Aerial Mapping

The helicopter is equipped with an instrument platform, including a LiDAR system, two optical cameras, and a thermal camera, to gather detailed information about the affected area.

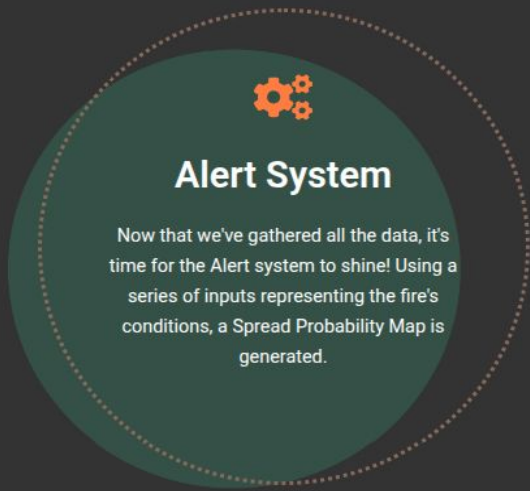


**Air Detection**

We quickly deployed our sensor-equipped helicopter to the fire alert zone to gather detailed information about the affected area. This way, we obtained the data we needed to respond in real time.

# Alert System

The alert system compiles all the necessary data to represent the initial fire conditions and triggers the simulations. The final output is a fire propagation probability map.



**Alert System**

Now that we've gathered all the data, it's time for the Alert system to shine! Using a series of inputs representing the fire's conditions, a Spread Probability Map is generated.



# Uncertainty Management

To manage uncertainties in data inputs, controlled adjustments are added to variables such as wind speed, temperature, and perimeter dimensions.




**Uncertainty Management**

To manage uncertainties in our inputs, we added some controlled adjustments to variables such as wind speed, temperature, and perimeter dimensions.


# Simulation

The advanced wildfire simulator leverages a new approach using the Point Cloud Burned Area model, providing detailed predictions and analysis of fire behavior, no matter how complex the situation.



### Simulation

Meet our high-tech wildfire simulator, a game-changer that leverages a new approach using the Point Cloud Burned Area model.




### Fire Alert!

We've received a fire alert through one of our key sources: the Aviris app, the departments or hotspots identified by EPRS. Our team is already mobilizing to assess the situation!


- + Crowdsourcing App Aviris
- + EPRS
- + Firefighters

- + LIDAR
- + Thermal Camera
- + Optical Camera



### Air Detection

We quickly deployed our sensor-equipped helicopter to the fire alert zone to gather detailed information about the affected area. This way, we obtained the data we needed to respond in real time.




### Alert System

Now that we've gathered all the data, it's time for the Alert system to alert using a series of inputs representing the fire's conditions, a Spread Probability Map is generated.

This map shows us the probability of the fire spreading, helping us stay one step ahead of the flames. Let's see what data the system needs:


- Initial perimeter
- Terrain information: slope, aspect, elevation
- Vegetation information: height, density, vegetation type, humidity
- Weather information: temperature, precipitation, humidity
- Wind information: speed, direction, cloud cover

It's like deliberately introducing a bit of unpredictability to see how it affects the outcome. This helps us create a probabilistic map that accounts for these variations, testing different "what if's" to ensure we're prepared for any situation that may arise.



### Uncertainty Management

To manage uncertainties in our inputs, we added some controlled adjustments to variables such as wind speed, temperature, and perimeter dimensions.



### Simulation

Meet our high-tech wildfire simulator, a game-changer that leverages a new approach using the Point Cloud Burned Area model.

Think of it as a high-performance, intelligent, super-calculator that gives you clear predictions and detailed analysis of fire behavior, no matter how complex the situation.

This map can also guide us to where a fire could spread, important for identifying the necessary resources and sending them where they are most needed!



### Probability of Spread Map

By running all these simulations, we create a fire spread probability map that becomes an important tool for risk management and resource optimization.

# Wildfire Propagation Map

The propagation map can guide you to where a fire could spread: important for identifying areas at risk, fire progression, and identifying where, how much, and what type of resources are needed.



### Probability of Spread Map

By running all these simulations, we create a fire spread probability map that becomes an important tool for risk management and resource optimization.

# Project SALUS Wildfire Risk Solutions for Spain funded by:



Grant CPP2021-008762 funded by MICIU/AEI/  
10.13039/501100011033 and, as appropriate, by “ERDF A way of  
making Europe”, by “ERDF/EU”, by the “European Union” or by  
the “European Union NextGenerationEU/PRTR”.

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