

SPATIAL INTELLIGENCE AND MULTIHAZARD NOWCASTING, WHERE IT IS MOST NEEDED

Wildcaster covers the whole chain of a multihazard emergency in one tool: it **detects** the wildfire from space, propagates **fire and smoke** across the real terrain, forecasts the **impact** immediately, **coordinates** every team working it, and produces the **report and the forensic record** afterwards. Always looking 24 hours ahead, on **scientifically validated models**, computed on **decentralised edge devices** that keep working with no connection, **integrating vertically from the command centre to the front line of action**, and available for any operating system and device.



VIEW WEBSITE DEMO:
<https://wildcaster.app/demo/>

Available for all devices: Windows, Android, macOS, Linux and as a web app, on wide screens or even phones.

TACTICAL

Robust for front line, field command and command centre

PORTABLE

Laptop, tablet or phone in the field

EDGE COMPUTING

Decentralised system, runs directly on the device

INTUITIVE

Learn to use it in minutes, designed to work under pressure

THE OPERATIONAL LOOP

1 DETECT

Satellites see the fire and the map updates by itself

2 NOWCAST

The next 24 hours of fire growth, in seconds

3 IMPACT

Towns, people and critical points in the path

4 COORDINATE

One shared picture across every team

5 REPORT

Generate detailed forecasts and forensic reports in seconds

SINGLE TOOL FOR ANY TYPE OF USE

ONE COMMON SHARED PICTURE

Every fire, team position and report on one picture that all devices keep in step. What one person marks, everyone sees.

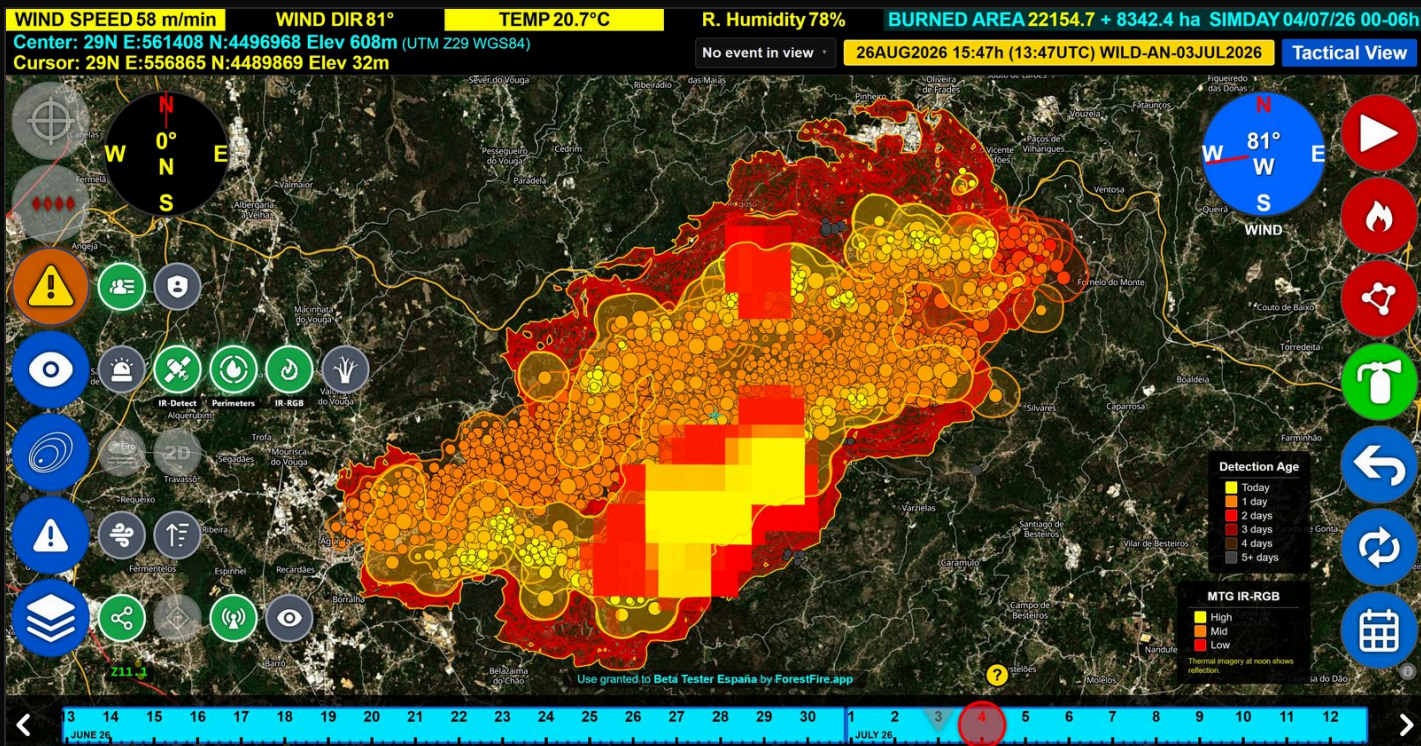
WORKS EVEN OFF-GRID

The forecast is computed on the device, from data carried on board, and keeps working with no connection at all.

FROM COMMAND TO THE LINE

Manager, coordinator and field team on the same tool, so the picture never has to be retyped or relayed.

RESPONSIVE AND ROBUST TACTICAL TOOLKIT

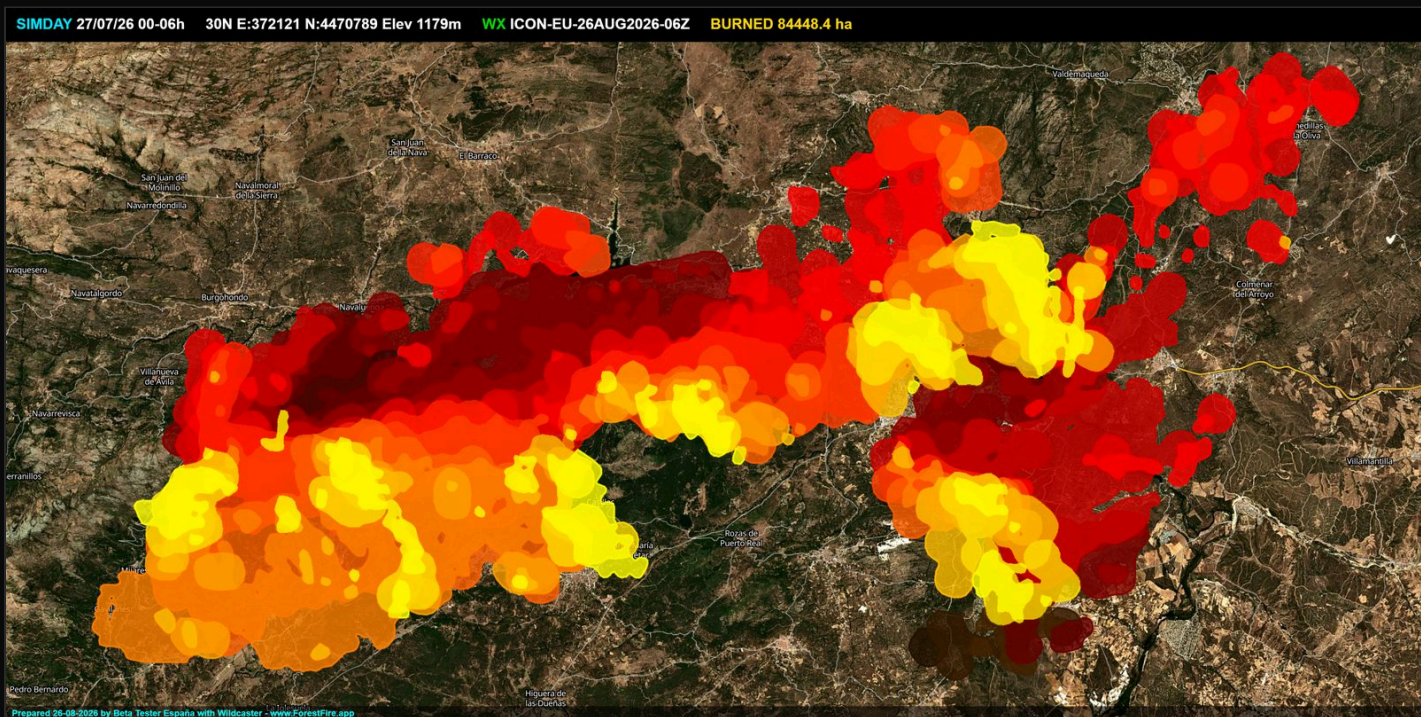
SPATIAL INTELLIGENCE COCKPIT, ANYWHERE.
MESH NETWORKING AND SERVERLESS.

- At a glance: Early Warning, Impact Forecast, Nowcasting, Operations scope, Reporting and Forensics.
- One tool, three roles. Manager, coordinator and field team.

- Runs with the network down. All the data is already on board.
- On foot, ground vehicle, aerial means or command centre.

NEAR REAL TIME FIRE DETECTION

IMMEDIATE ASSESSMENT OF BURNING DAMAGE, IN REAL TIME OR FORENSIC



Perimeter estimated in near real time from satellite detections, not surveyed on the ground. Colour shows age: yellow is burning now, dark red is a day old.

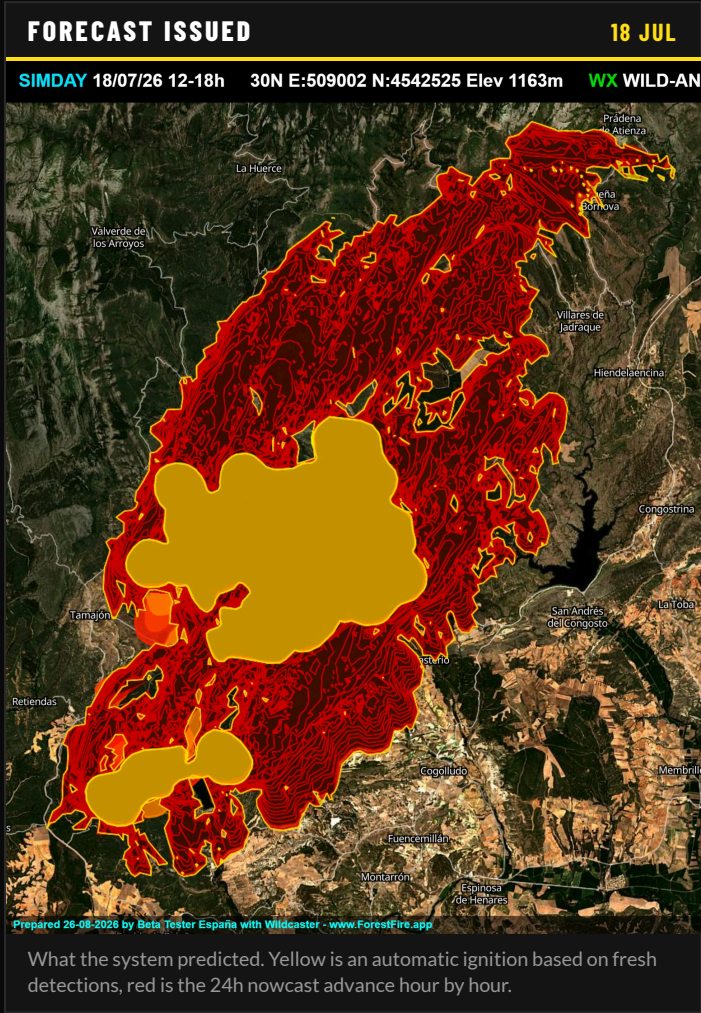
- Multi-constellation IR detection and imagery.
- A geostationary sensor looks at the same ground every ten minutes.

- Often the first alert, before anyone calls it in.
- No drawing, no tracing. Perimeter and hectares are automatic.

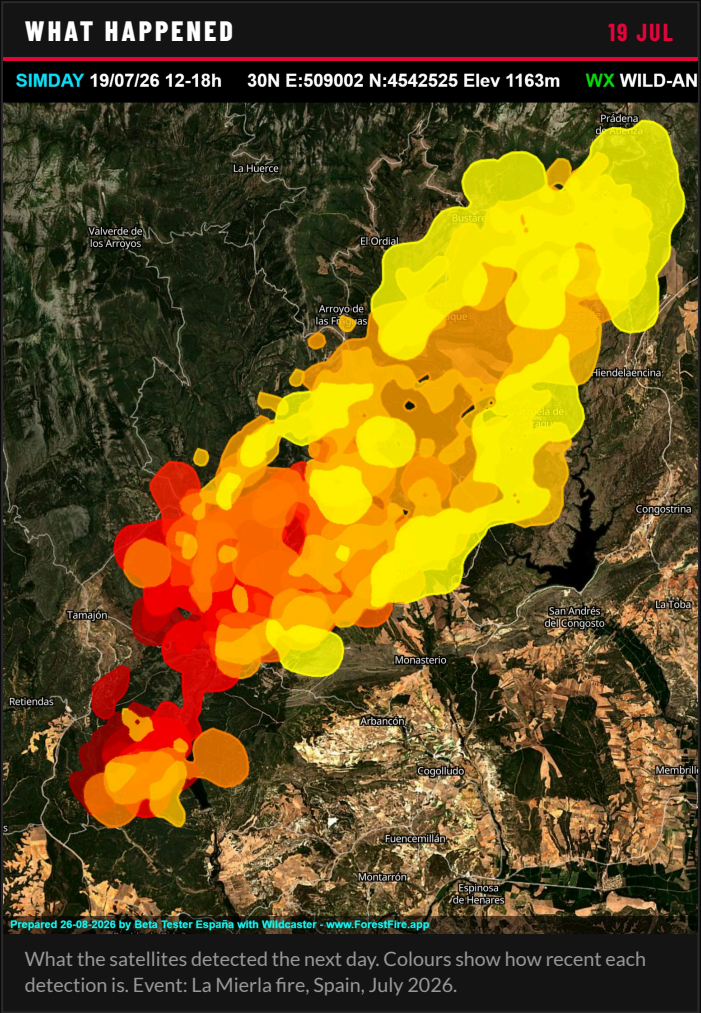
NOWCASTING · WILDENGINE

3 SECONDS COMPUTATION FOR THE NEXT 24H NOWCASTING

Our hybrid fire propagation engine, using hourly weather fields and terrain data, can produce accurate nowcasts for 24h, computed on the spot. Validated during 2026's intense fire season Europe-wide, from small fires to multi-day megafires.



- ▶ A full day of warning on where to place crews, machinery and aircraft.
- ▶ One to three seconds for a full 24 hours of fire behaviour, on the device, even without connection.



- ▶ Fast reruns let you simulate interventions and changes on the fly, with the freshest weather forecasts.
- ▶ Leverages fire intelligence. Every participant shares and completes the operational picture.

THE WILDENGINE NOWCASTING MODEL

A heavily optimised scientific-grade tool, for tactical results on the spot.

A Rothermel surface-spread core sets the local rate of spread from fuel, moisture, wind and slope. The front advances as elliptical wavelets on a level-set solver, so separate fires merge, wrap around barriers and split without any hand editing. Van Wagner and Cruz govern crown-fire initiation and active crown spread, Byram yields fireline intensity and flame length, Fosberg drives dead fuel moisture hour by hour, and a firebrand model launches, transports and ignites spot fires downwind.

WHAT THE NOWCAST IS BUILT FROM

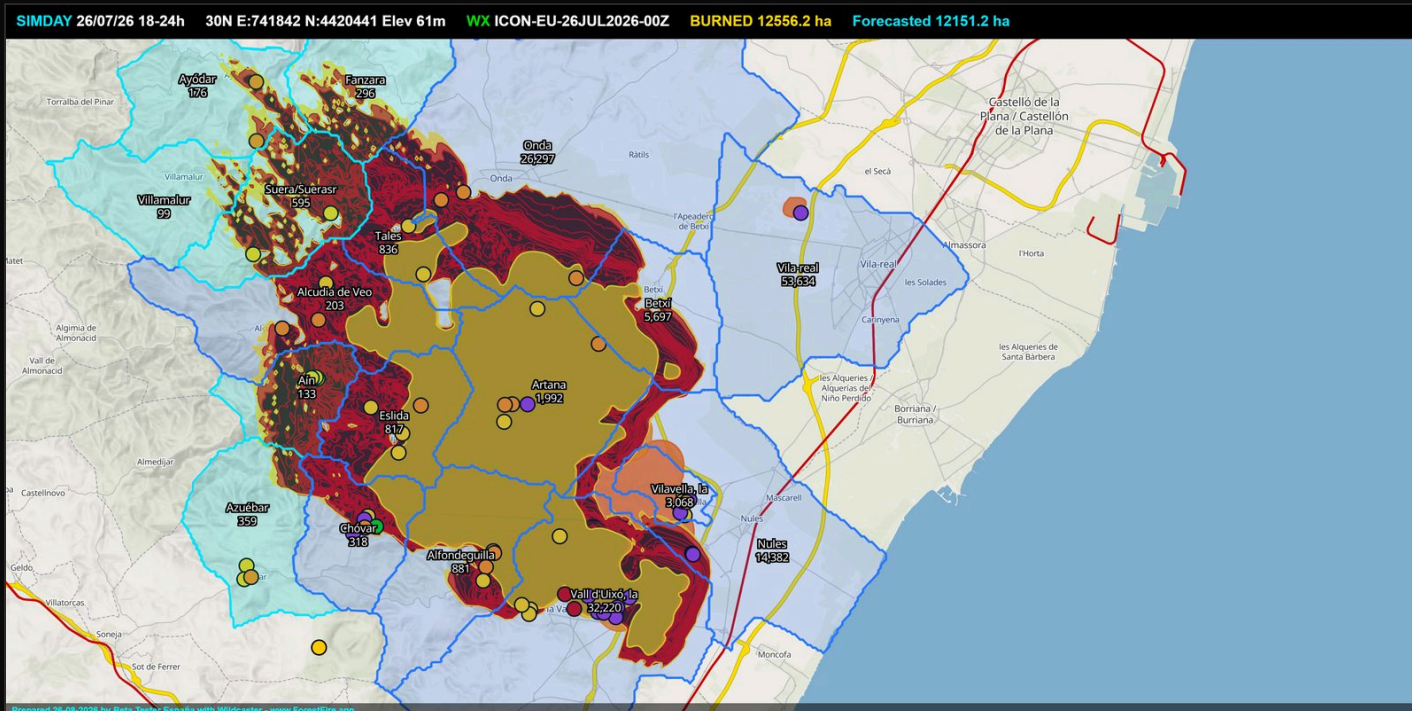
01 TERRAIN The real ground: elevation, slope and the direction each hillside faces	02 WEATHER Wind, temperature and moisture, hour by hour, across the whole area	03 FUELS What is on the ground to burn, and how dry it is	04 THE FIRE Ignitions, area already burned, and the suppression work under way
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Built from Copernicus, ESA, EUMETSAT and NASA space data and DWD ICON-EU weather, all carried on the device. Runs on a ~100 m grid with adaptive timestep and narrow-band front tracking.

24H IMPACT FORECAST

IMPACT FORECAST CHANGES FIRST RESPONSE TO PROACTIVE RESPONSE

The moment the fire is on the map, Wildcaster lists the **affected critical points hour by hour**, the municipalities and the population in its path, and the **burnt surface by land type**, each one with the hour it is expected to be reached.



Affected municipalities with their official population, and every critical point the fire is expected to reach. Cyan is forecast, white is already confirmed by satellite.

- ▶ **Municipality by municipality.** Official census population, never an estimate, so the figure survives scrutiny.
- ▶ **Millions of Europe-wide critical points** already on board, and the ability to load more: hamlets, isolated dwellings, farms, campsites, hotels, schools, fuel stations, industry, telecom masts, linear infrastructure.
- ▶ **Detailed reports by arrival hour.** Confirmed reached, or forecast with the hour of arrival.
- ▶ **Evacuation and confinement decisions** can be made fast, with state-of-the-art machine-aided intelligence.

FAST PARTICLE DISPERSION SIMULATION

SMOKE AND POLLUTANTS PLUME AND CONCENTRATION NOWCASTING



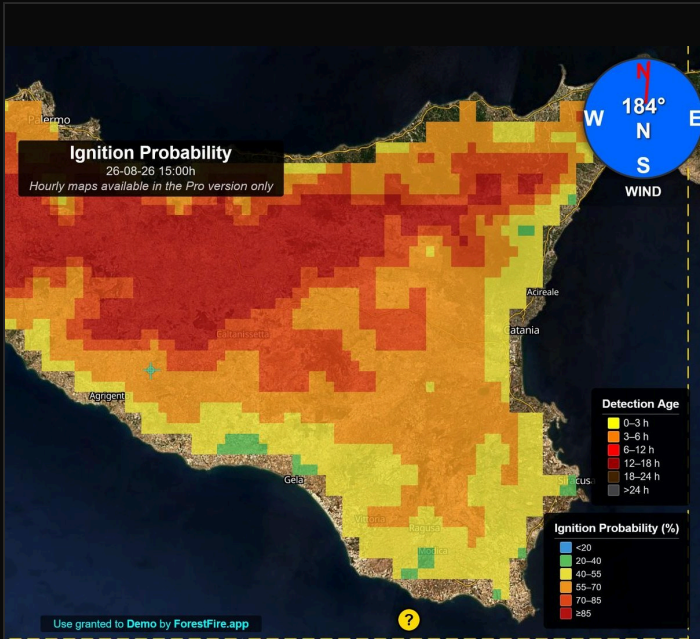
The plume in three dimensions, hour by hour, over the real landscape.

A fire threatens the people in its path. Its smoke threatens people who are nowhere near it, up to hundreds of kilometres downwind. Wildcater analyses **concentration at ground level**, using an advanced **particle dispersion engine** driven by **three-dimensional atmospheric conditions**.

- ▶ **Where the plume lands and when**, hour by hour, at the height people breathe.
- ▶ **Supports the health decision**: advisories, shelter in place, protection of hospitals, schools and care homes.
- ▶ **Supports traffic and airspace**: visibility on motorways, approaches to airports.
- ▶ **Overnight matters most**. The model reproduces the night-time collapse that pushes smoke back down into valleys and towns.
- ▶ **Also assesses chemical and artificial smoke plumes**, not only wildfire smoke.

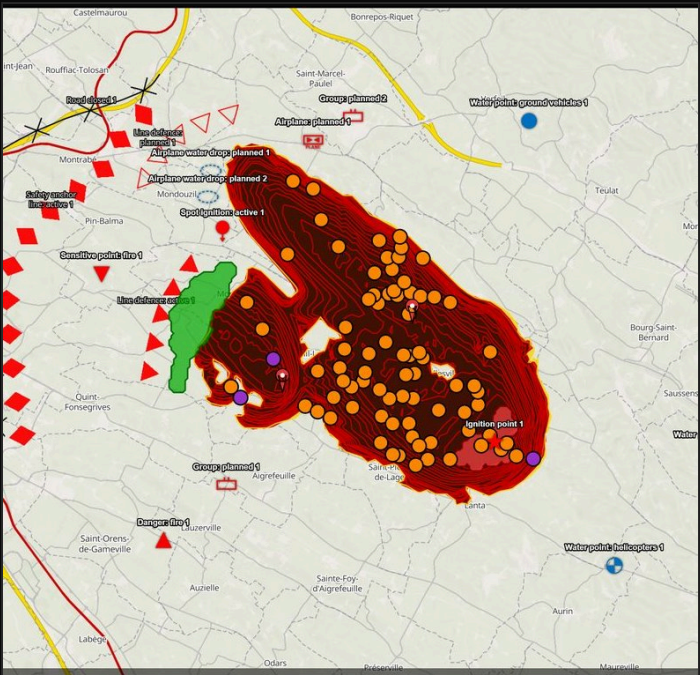
AND EVERYTHING ELSE THE COMMAND POST NEEDS

ONE TOOL, THE WHOLE PICTURE



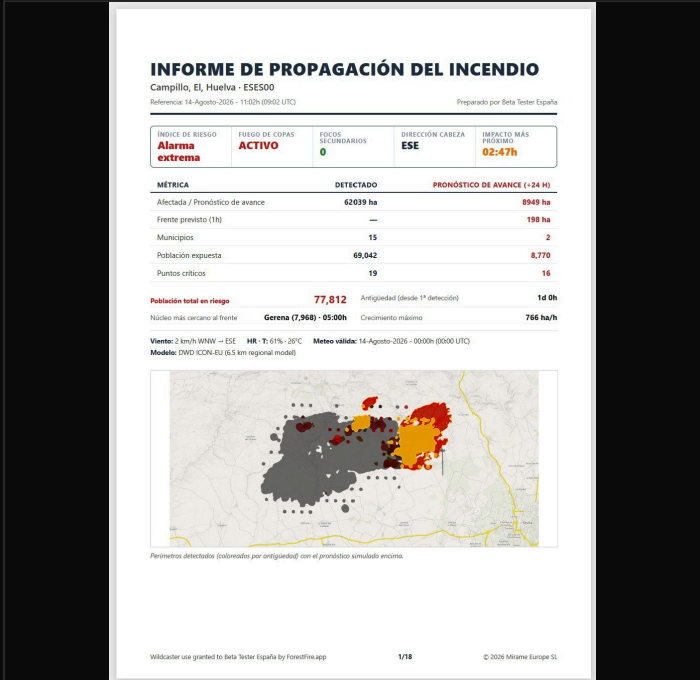
HOURLY DYNAMIC FIRE RISK

Where the next fire is likely to start. Fire weather index, ignition probability and dead fuel moisture across the whole region, refreshed hour by hour rather than published once a day, to pre-position resources before anything burns.



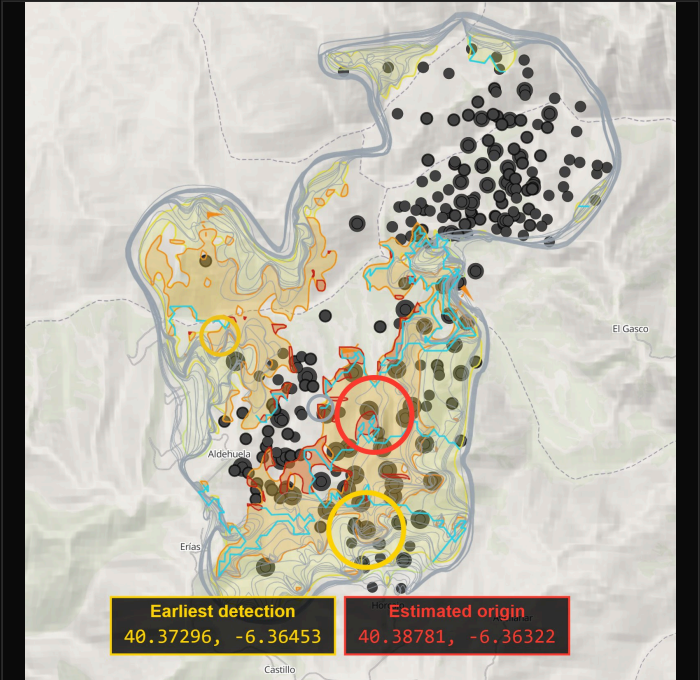
TACTICAL SHARED SCOPE

What one person marks, everyone sees. Positions, reports and countermeasures converge automatically over the local network with no server, or over an encrypted relay, drawn in the official symbology of each country.



ADVANCED REPORTING

One press, a full document. Situation, forecast, exposed population, critical points, weather and maps, ready to hand to the authority in the language of the country. Identical for every team on the incident.



IGNITION FORENSICS

Where it started, and when. The system runs the fire backwards from the satellite record to estimate the ignition point and time. Support for the investigation, and for establishing responsibility.

The Wildcaster ecosystem: Wildcaster the field application, WildEngine the fire and smoke nowcasting core, WildGEO the data service. Inputs from Copernicus, ESA, EUMETSAT, VIIRS and MODIS space data, DWD ICON-EU, AEMET, national statistics institutes and OpenStreetMap. Screens are real output from real incidents in Spain, Portugal and France, 2026.