

CrowdWall

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Ciemat
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fzc
Fundación Zaragoza
Conocimiento



MINISTERIO
DE CIENCIA, INNOVACIÓN
Y UNIVERSIDADES

2006: Desktop Grid Computing

2007: Volunteer Computing

2008: BOINC Umbrella Project

2009: BOINC Multiserver

2010: Participatory Experiments

2011: Volunteer Sensing, virtual excursions

2012: National institution. Socientize

2013: Serious Games, Open Policy

2014: Crowdfunding, Collective Intelligence

2015: CitSci Labs, Socioeconomics, S&T&Arts

2016: Cesar Etopia, ECSA

2017: National CS Plan

2018: Promotion of Citizen Science Spain. D-NOSES, BRITEC

2019:
Eu-citizen.science,
Local CS Observatory

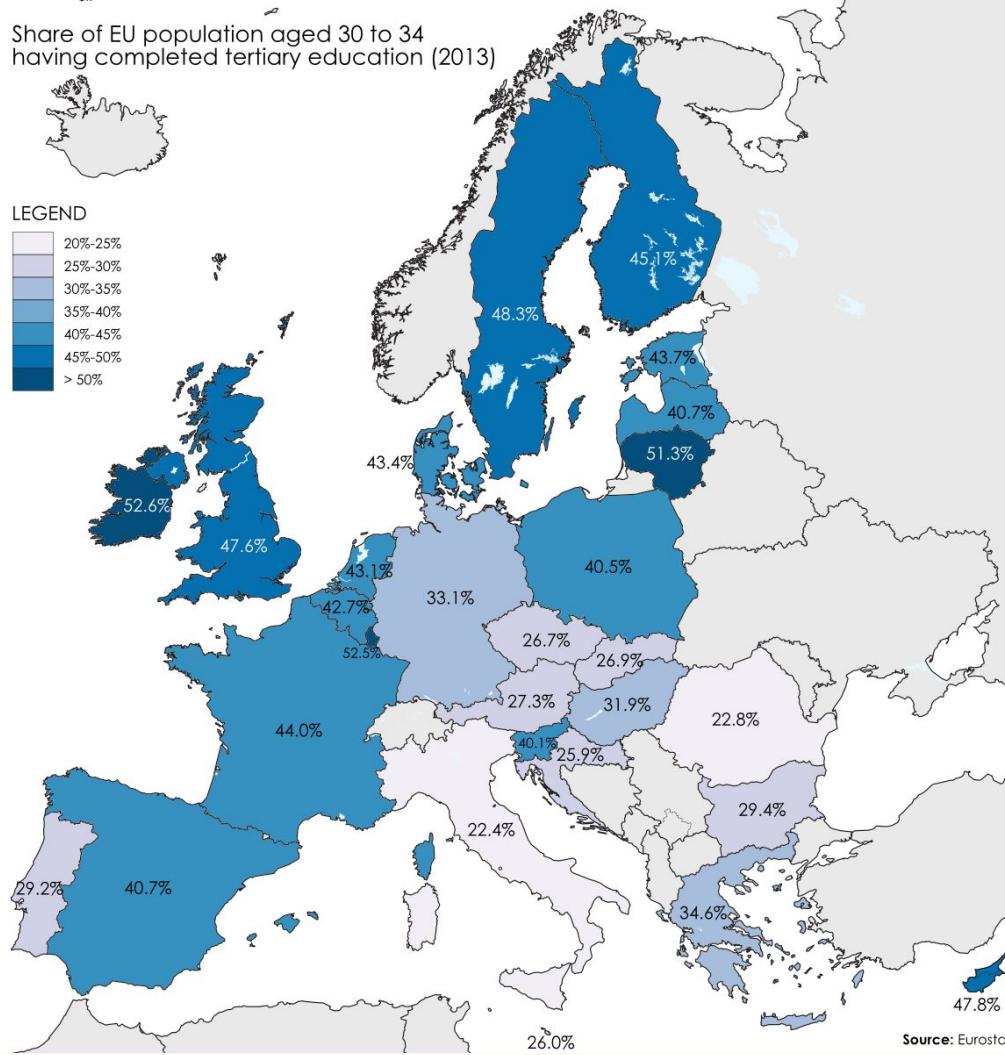
2020: NEWSERA

Share of EU population aged 30 to 34
having completed tertiary education (2013)



LEGEND

- 20%-25%
- 25%-30%
- 30%-35%
- 35%-40%
- 40%-45%
- 45%-50%
- > 50%



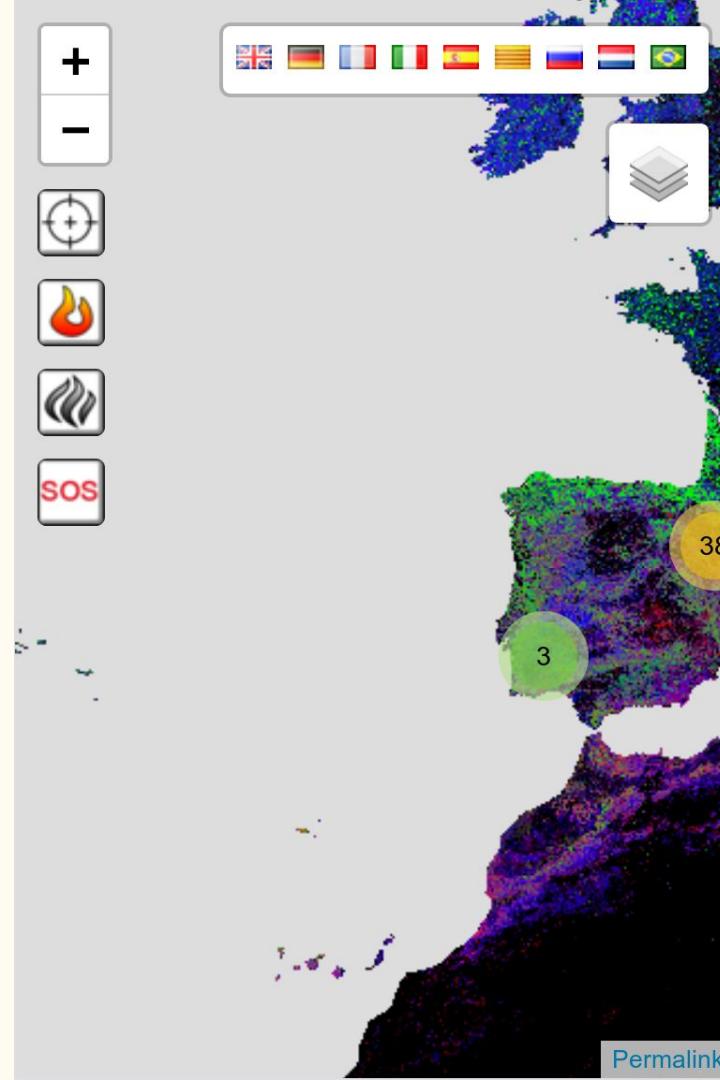
Source: Eurostat

CrowdWall

(Crowd against fire)

Is and app able to

- Inform people affected by a wildfire
- Provide mechanism to upload data (by affected people)
- Check fires (through modis and viirs) , weather and land properties
- Broadcast messages to affected people
- Follow affected citizens
- Predict futures wildfires (in construction)



How - Interviews

- Pau Costa Foundation
- Forest Operations Group (GRAF)
- University of Zaragoza - Department of Geography
- Pyrenean Institute of Ecology
- University of Lleida - Department of Agricultural and Forest Engineering
- Government of Aragón - Safety and Civil Defense (DGA)
- Government of Aragón - Association of Agents for the Protection of Nature in Aragón (AAPNA)
- Zaragoza City Council - Firefighters and Civil Defense

How - Requirements

- Easy to use
- Minimal user interaction
- Share location
- Accessible (App + Web)
- Prioritize safety

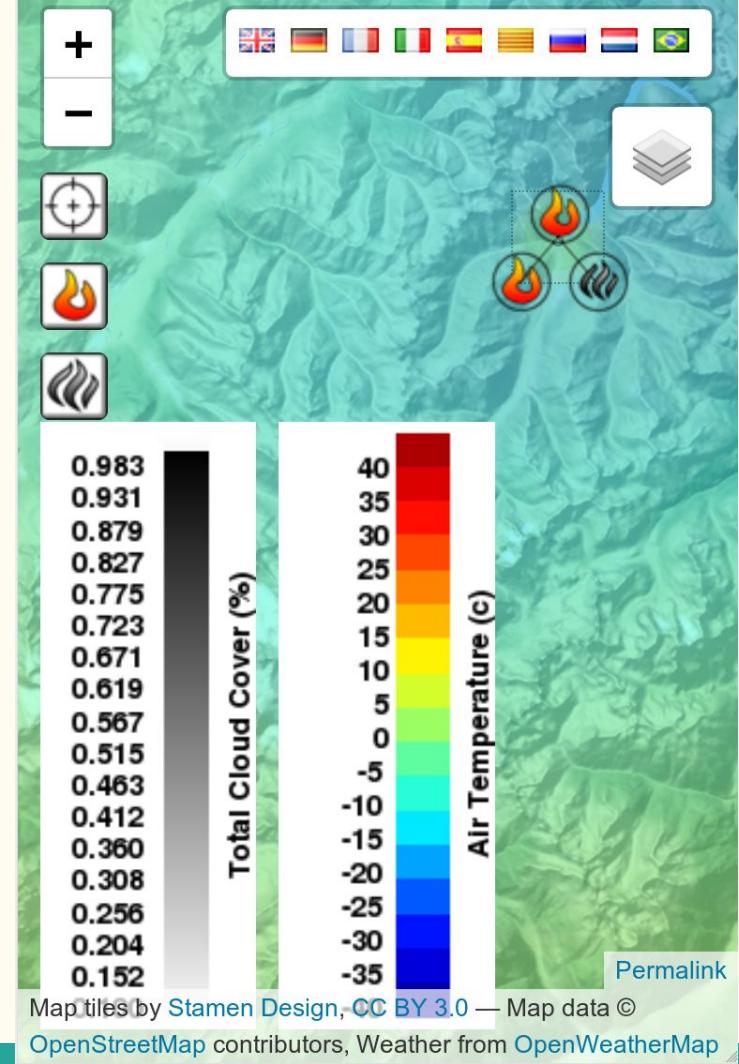
A large black plus sign inside a white rounded rectangle.A large black minus sign inside a white rounded rectangle.

Target Public (priority)

- Affected people
- Firefighters
- Curious
- Scientists

Four data sources

- VIIRS
- MODIS
- OpenWeatherMap
- Crowdsourced



VIIIRS

Visible Infrared Imaging Radiometer Suite

- Produced in near-real time
- Used in The European Forest Fire Information System (EFFIS)
- Showing active fires
- Showing burnt areas

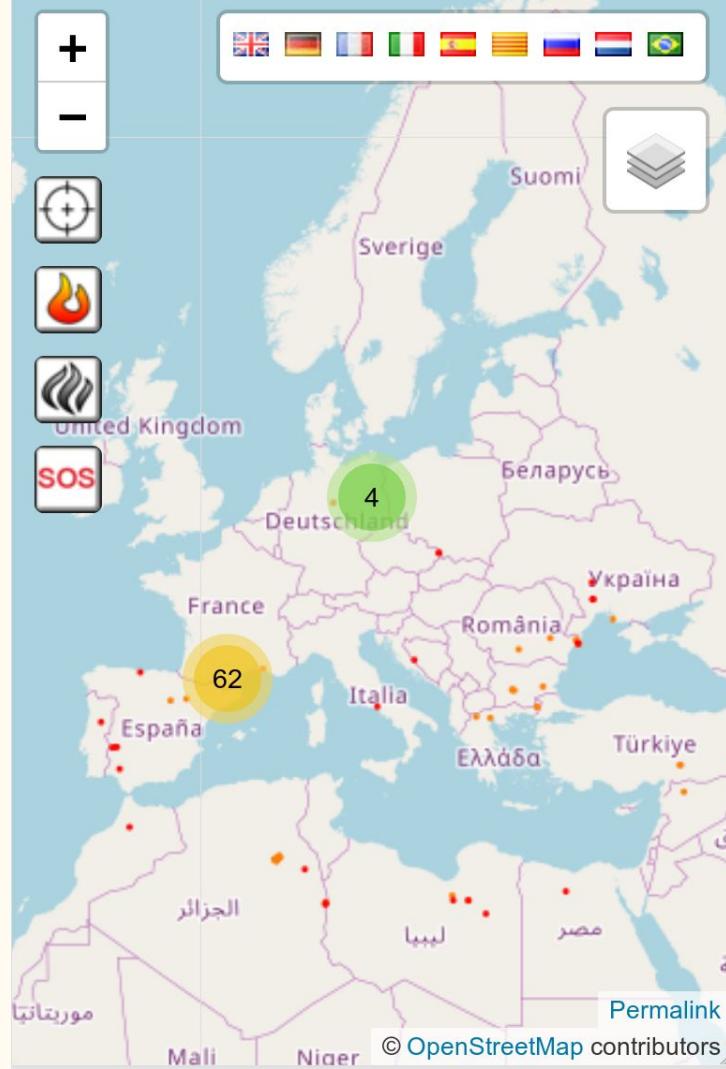


MODIS

Moderate Resolution Imaging Spectroradiometer

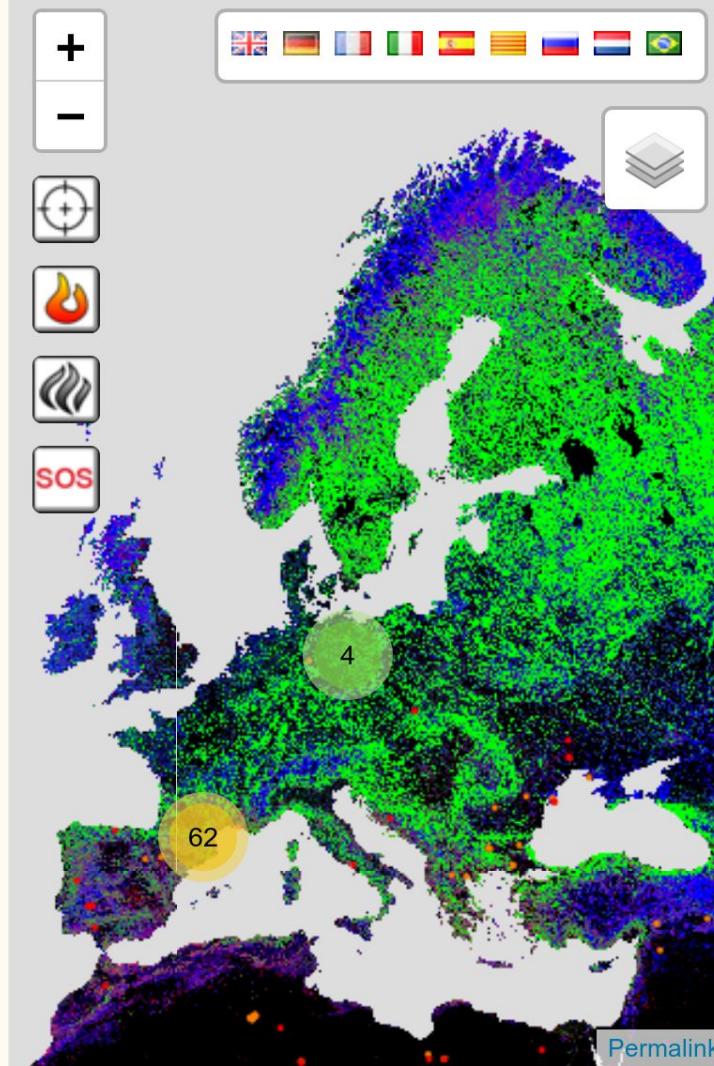
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<http://viirsfire.geog.umd.edu/pages/viirsvsmodis.php>



MODIS

NDVI: normalized difference vegetation index

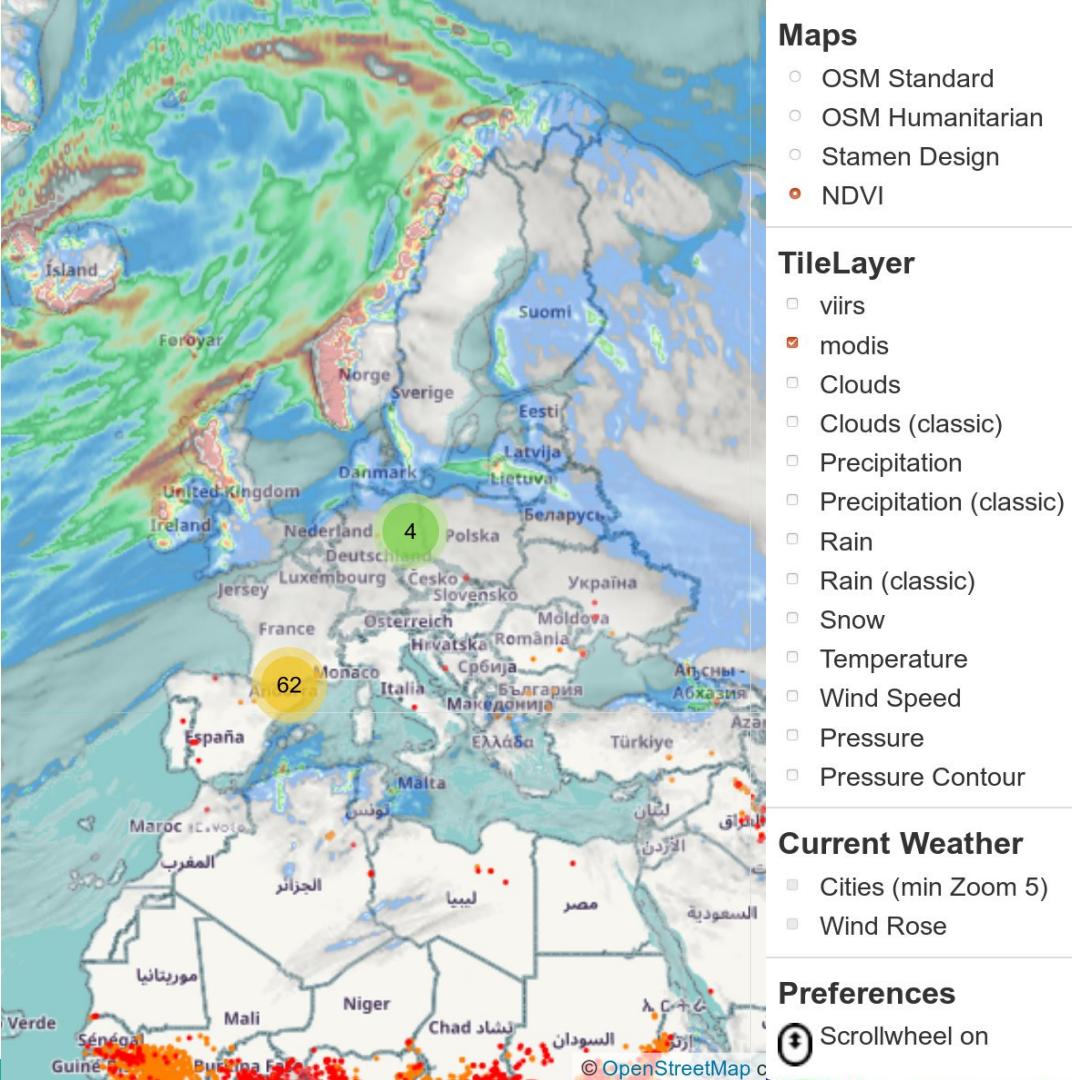


OpenWeatherMap

	Free	Startup	Developer	Professional	Enterprise
Price per month Price is fixed, no other hidden costs (VAT is not included)	Free	40 USD / month	180 USD / month	470 USD / month	2,000 USD / month
Subscribe	Get API key and Start	Subscribe	Subscribe	Subscribe	Subscribe
Calls per minute (no more than)	60	600	3,000	30,000	200,000
Current weather API	✓	✓	✓	✓	✓
4 days/hourly forecast API <small>NEW</small>	-	-	✓	✓	✓
5 days/3 hour forecast API	✓	✓	✓	✓	✓
16 days/daily forecast API	-	✓	✓	✓	✓
Climate forecast for 30 days <small>NEW</small>	-	-	✓	✓	✓
Weather maps 2.0: Current, Forecast, Historical layers	-	-	✓	✓	✓
Relief maps	-	-	✓	✓	✓
Weather maps 1.0	✓	✓	✓	✓	✓
Bulk download	-	-	-	✓	✓
UV index	✓	✓	✓	✓	✓
Weather alerts	✓	✓	✓	✓	✓
Service					
Availability	95.0%	95.0%	99.5%	99.5%	99.9%
SLA	-	-	-	-	✓
Weather API data update	< 2 hours	< 2 hours	< 1 hour	< 10 min	< 10 min
Weather maps data update	< 3 hours	< 3 hours	< 3 hours	< 3 hours	< 3 hours
API lifetime support	Current version	Current version	Current version	All versions	All versions
License for maps, APIs, and other products	CC BY-SA 4.0	CC BY-SA 4.0	CC BY-SA 4.0	CC BY-SA 4.0	CC BY-SA 4.0 or custom
License for data and database	ODbL	ODbL	ODbL	ODbL	ODbL or custom
Tech support	Helpdesk	Helpdesk	Helpdesk	Direct	Direct 24x7

OpenWeatherMap

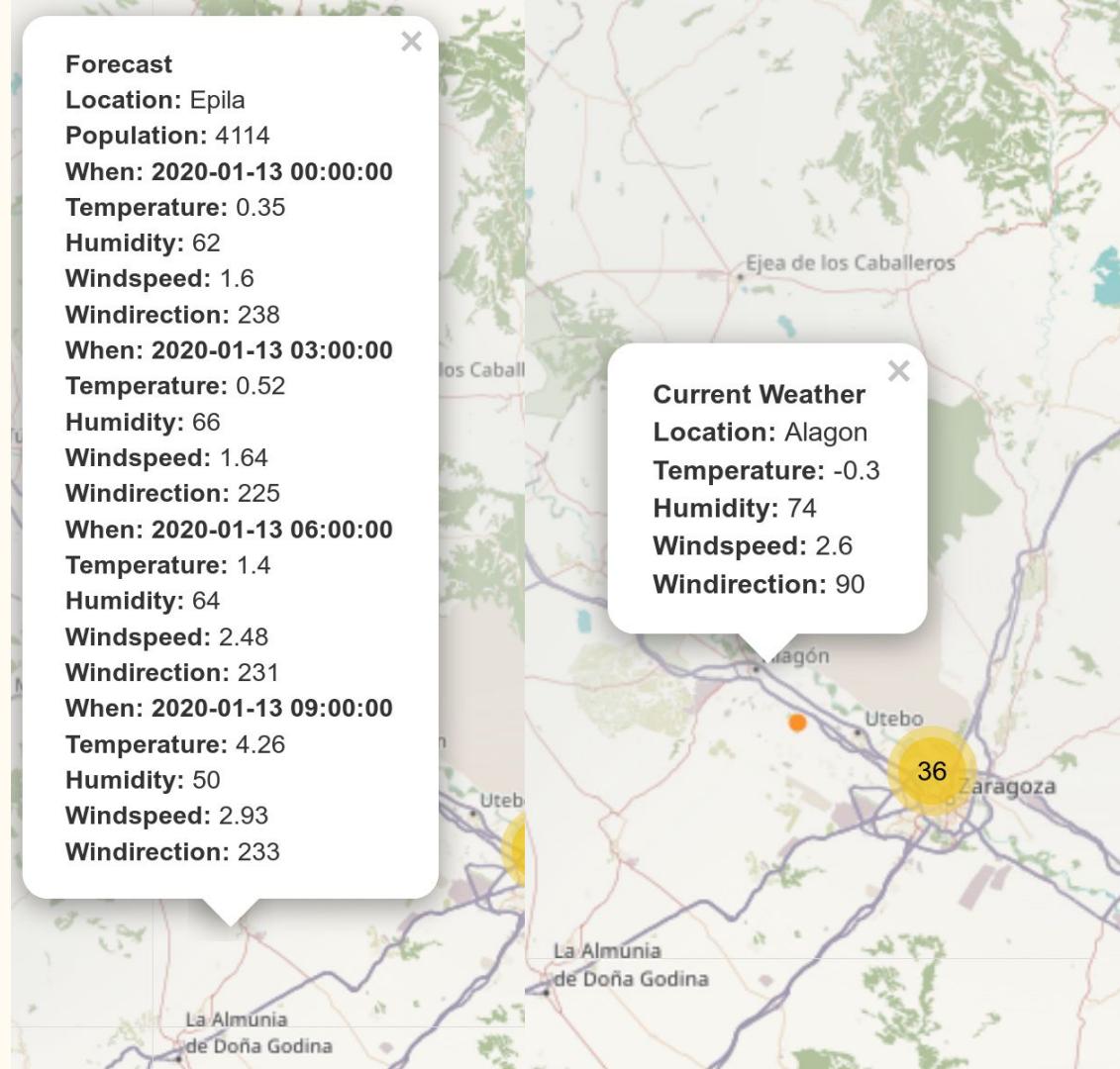
Layers



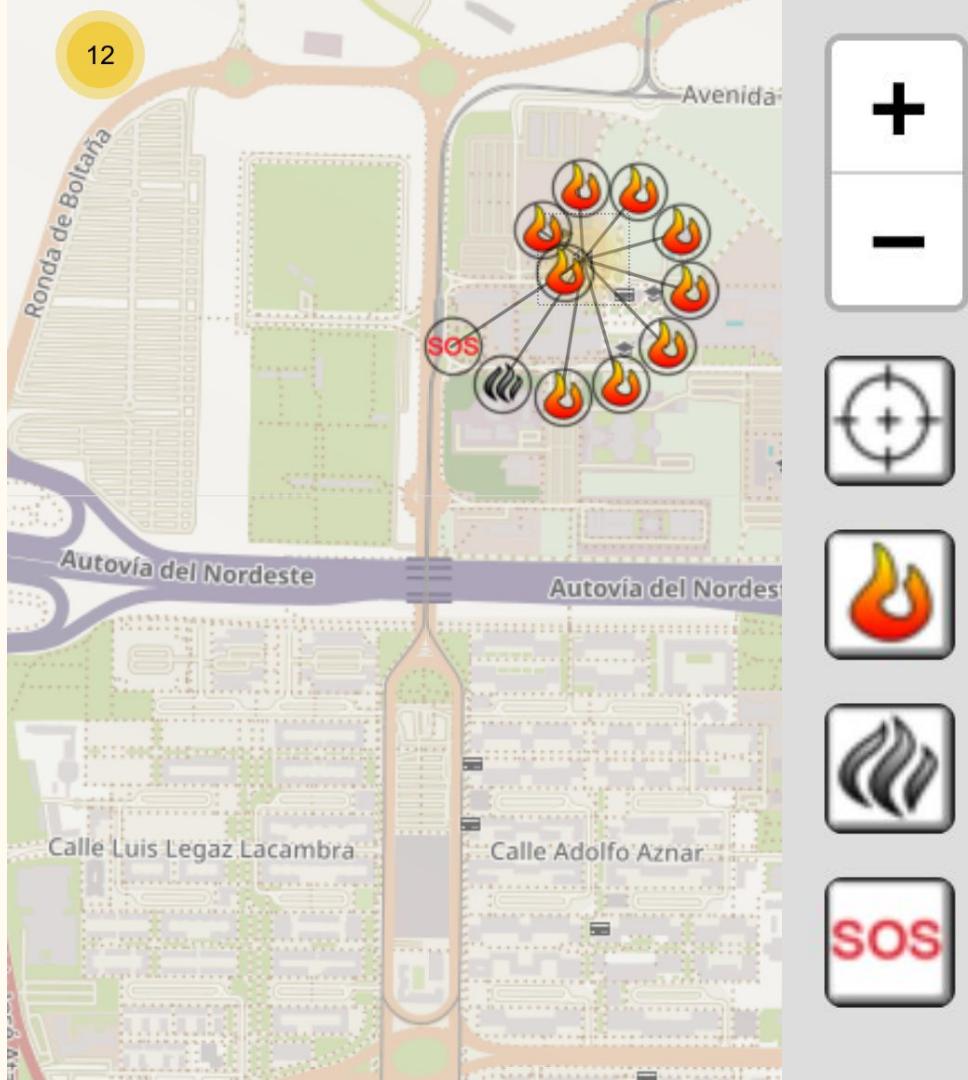
OpenWeatherMap

Information

- Current Weather
- Forecast



CrowdSourced data





Maps

- OSM Standard
- OSM Humanitarian
- Stamen Design
- NDVI

TileLayer

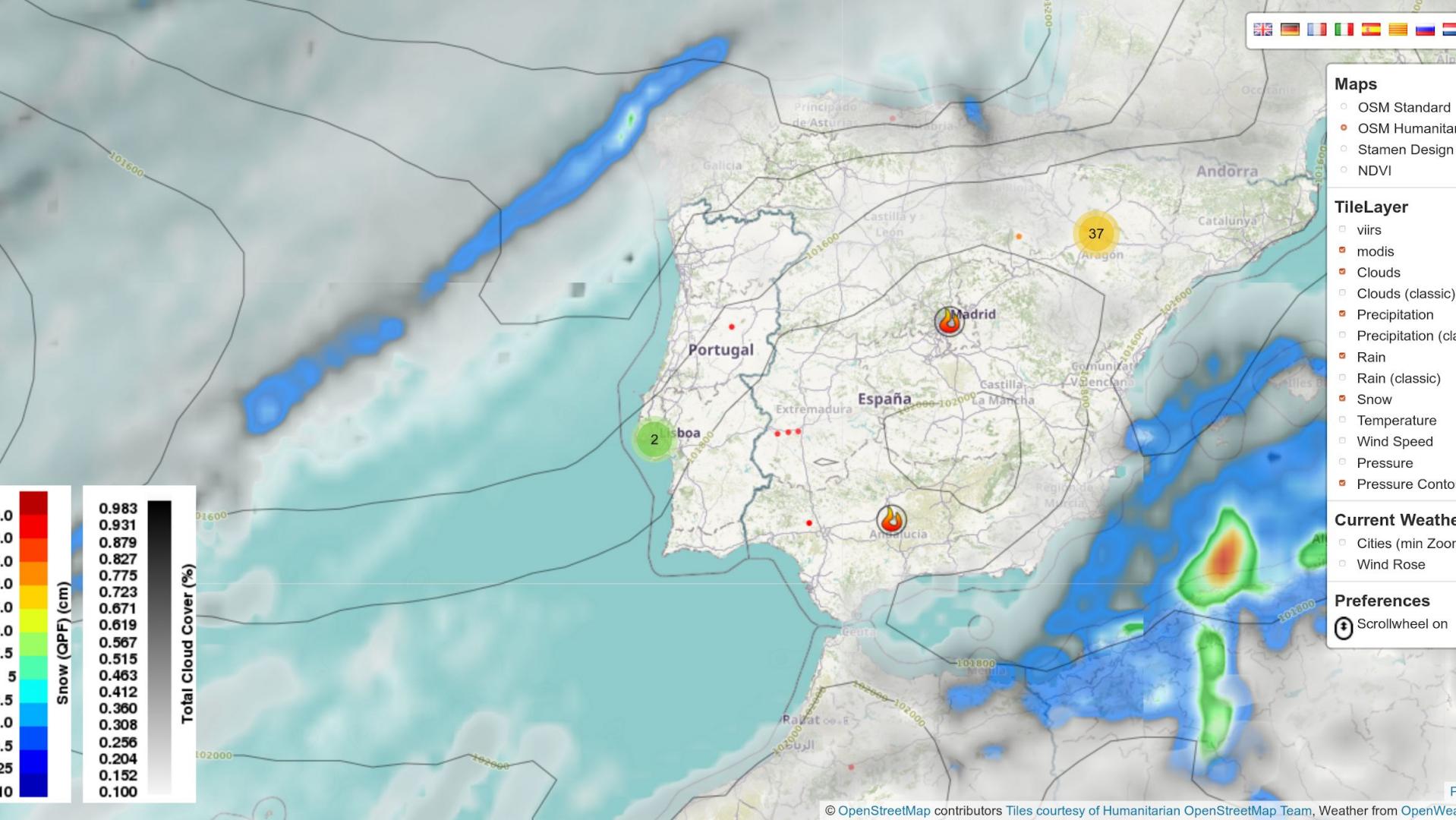
- viirs
- modis
- Clouds
- Clouds (classic)
- Precipitation
- Precipitation (classic)
- Rain
- Rain (classic)
- Snow
- Temperature
- Wind Speed
- Pressure
- Pressure Contours

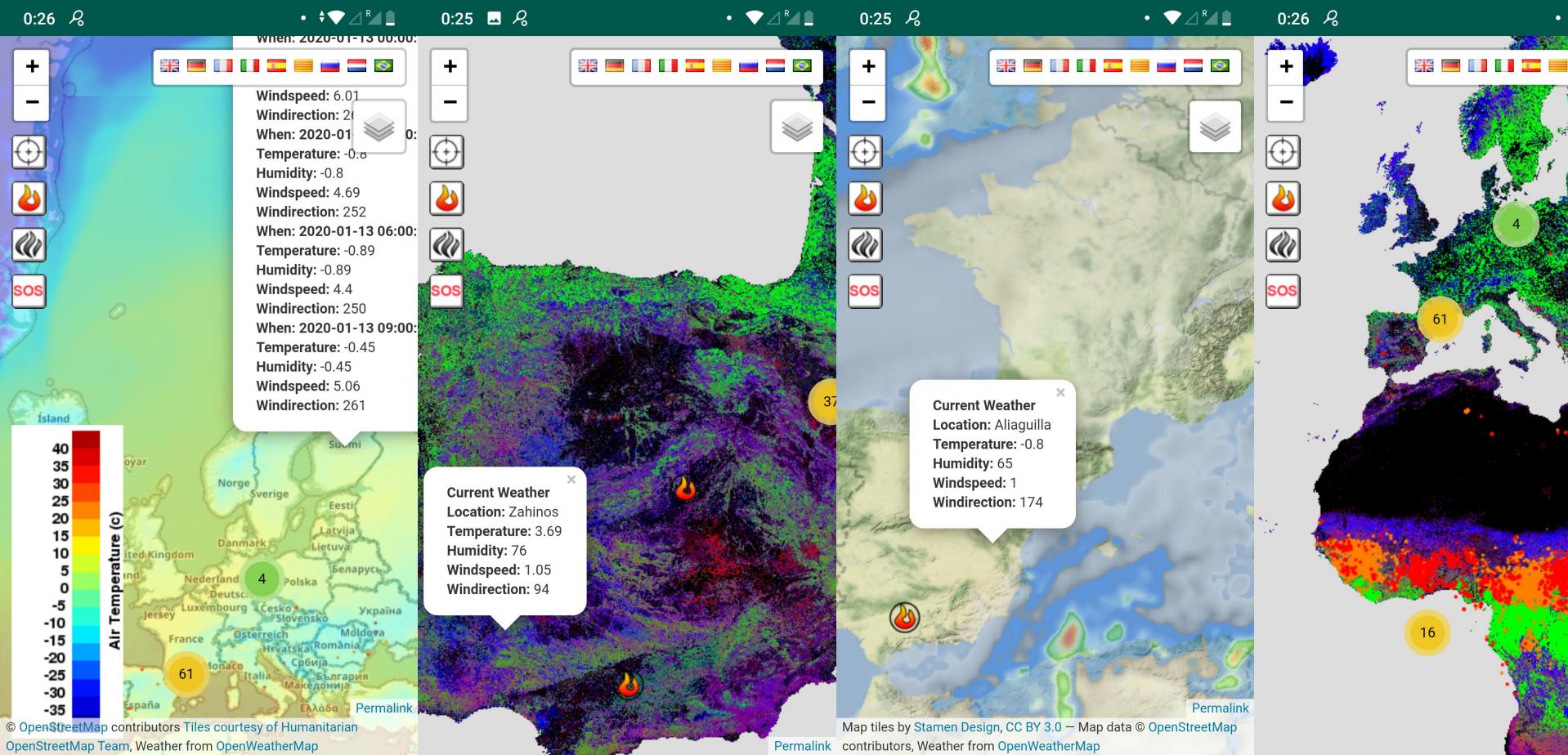
Current Weather

- Cities (min Zoom)
- Wind Rose

Preferences

- Scrollwheel on





AI - TensorFlow - Keras

Objectives:

Use weather + NDVI + DEM + crowd-data to predict wildfire behaviour

Next steps

Technical

- Work on Keras
- Voronoi polygons using fires
- Lines profiles (while walking to voronoi frontier)
- Off-line mode
- Native version?

Non-technical

- Feedback from stakeholders
- Test and real use phase
- Launch at regional level
- Find complementary datasets

Thanks!

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