

smocam

**Visual AI for camera based detection of
smoke and fire in outdoor environment**



Innovative technology

smoCAM uses proprietary computer vision technologies and cutting edge visual AI to detect the presence of smoke plumes and flames in outdoor, by using visible cameras. smoCAM is useful in preventing wildfire in natural environments, since it can be used on both fixed and PTZ cameras (and on drone-mounted cameras as well), but it is also used to produce fire early warnings in urban environment, industrial plants and waste treatment sites.

Digital outputs

smoCAM works with outdoor IP CCTVs to return minute by minute updates on the presence and extension of smoke plumes and flames within one or more regions of interest set in the camera view. smoCAM data are digital by nature and can be exchanged both as telemetry and custom alerts via MQTT or https protocols, making communications with control rooms and third party decision support systems easy and straightforward.

Your measurements, your privacy

smoCAM is an edge native application, meaning that it runs directly onboard smart cameras by supported manufacturers, or local processing units installed within the camera network, like the Climate Camera Kit that we developed in collaboration with Eurotech. This keeps your images and privacy safe (smoCAM is GDPR compliant) with no need to open your network towards remote cloud servers.

TECHNICAL DATA

Performed measurement

Operating principle	Software video analysis
Detected features	Smoke plumes and flames
Measured variables	Extension of the detected smoke plumes and flames, as a percentage of a reference region of interest
Sampling frequency	12 Hz (images per minute)
Measurement cycle	1 min

Camera requirements

Camera type	Visible IP camera
Camera format	Box, bullet or PTZ
Sensor dimension	1/2.8" or greater
Image resolution	fullHD 1080p (1920 x 1080 px)
Max operational focal length	10 mm with 1/2.8"
Camera position and angle	Horizontal $\pm 10^\circ$
Light conditions	The presence of visible light sources is required during nighttime

Output

Data communication	10/100 Mbps Ethernet 4G LTE (external router and SIM required)
Data output protocols	MQTT, https
Data format	JSON formatted text
Data channels	Telemetry and alerts (based on custom thresholds)