SAFERS

Structured Approaches for Forest fire Emergencies in Resilient Societies

This project aims to create a **novel forest fire emergency management system** capable of acting along the whole emergency cycle. It will couple heterogeneous **Big Data** such as Earth Observation, in-field data and social media with advanced models based on Artificial Intelligence to make citizens, first responders and decision makers more **resilient against forest fires**.

The project in numbers

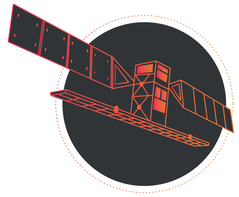
3 years
From 2020 to 2023

3.25 M
Total cost

14 partners
7 countries

4 demo sites
Italy, France, Spain & Greece

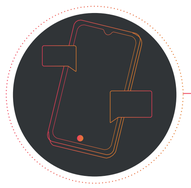
1 open platform
For forest fire management



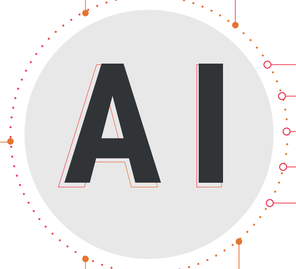
Earth Observations
Data from the COPERNICUS space, service segment, and GEOSS.

Fire sensors
Smoke detection using cameras and sensors placed in forests.

Topography & Open Data
Fuel & topographic data, population distribution and critical infrastructures to predict the fire progression.



Social media & other apps
Real time social media analysis to detect and extract information. An intelligent Chatbot to promote citizens awareness and enable a crowdsourced in-field data collection for all users, including volunteers and professional responders.



Weather forecasts
Sub-seasonal weather forecast models to increase forest fire early warnings.

SAFERS Open Platform

The open source SAFERS Platform is a **Big Data Emergency Management System** that uses AI and the outputs of the intelligent services to provide decision support.

Risk maps
To detect fire-prone areas.

Early warnings
Early fire detection thanks to fire sensors and cameras.

Fire delineation and propagation
Coupling EO, weather forecasts, in-situ and crowdsourced data for generating delineation and propagation maps, enabling a better decision-making in the response phase.

Habitat recovery monitoring
Assess impacts on ecosystems in terms of soil and biodiversity to better plan restoration actions.

Impact assessment
Impact estimation in terms of economic losses for better decision-making.

PHASE A
Prevention and Preparedness

SAFERS creates an **early warning system and risk maps** to allow all stakeholders to be ready for a possible forest fire as well as to inform citizens. It integrates information extracted from **different sources**, including social media and mobile apps.

Citizens and volunteers play an active role in the emergeny cycle

PHASE B
Detection and Response

SAFERS uses **multiple data sources** with advanced **AI** to map the fire status and to predict its propagation, **creating actionable information** for first responders and decision makers. It allows in-field citizens, volunteers, and professional responders to **provide situational updates** via an Intelligent Chatbot.

First responders have accurate information about the forest fire status and its evolution

PHASE C
Restoration and Adaptation

To **assess the impacts** of forest fires, SAFERS monitors the regeneration of **damaged ecosystems** and computes the economic losses resulting from burned areas, suggesting strategies to reduce the impacts of future emergency events.

Authorities have support for decision-making

Find out more

www.safers-project.eu
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