SAFERS at a glance

Forest fires are exacerbated by extreme weather conditions, which are increasing both in frequency and in magnitude due to **climate change**. Globally, massive fires have swept through forests and other landscapes at an alarming rate, resulting in the loss of human lives, destruction of homes and biodiversity in addition to various destructive impacts.

In order to support societies in becoming more **resilient** when acting against forests fires, the SAFERS project is going to develop an **open platform** which integrates several data sources (Earth Observation data and services offered by the EU Copernicus programme and GEOSS, crowdsourced data from social media and from other applications used by citizens and emergency staff as well as real- time data provided by accurate sensors to detect smoke or fires) and transform them into **actionable information** and services.

SAFERS project officially started in October 2020 for a period of 3 years (2020-2023) and with a budget of 3.25 million euros. It is coordinated by LINKS foundation and brings together **14 partners** coming from 7 European countries.

Partners

ASTROSAT
CERTH CENTRE FOR RESEARCH & TECHNOLOGY HELLAS
FMI
Alpha Consult
RISCOGNITION
LINKS
PAU COSTA FOUNDATION
CSI your digital partner
SEMIDE EMWIS
cima RESEARCH FOUNDATION
waterview

The project in numbers

7
EU countries

Italy • Greece • Germany
France • Finland • UK • Spain

1 open platform
for forest fire management

3.25
Million €

Co-funded by the European Union

3
years

From 2020 to 2023

Find out more

www.safers-project.eu

SAFERS project
@SAFERS_H2020
/SAFERS project

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 869353

SAFERS

Structured Approaches for Forest fire Emergencies in Resilient Societies

www.safers-project.eu

Key information provided by cutting-edge technology

SAFERS relies on multiple technologies to gather large amounts of data and processes it with **Artificial Intelligence** algorithms to create novel services and data driven solutions, including a comprehensive **Emergency Management System**.

In every phase of the emergency cycle

BEFORE:

- It anticipates the forest fire by developing **risk maps** thanks to the coupled use of Earth Observations, weather forecasts, topographic data as well as open data.

DURING:

- It relies on **fire sensors** and cameras placed in forests for improved **early warnings**.
- It creates **fire delineation maps** and predicts the fire evolution, providing effective decision support to first responders.

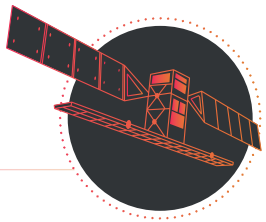
AFTER:

- It monitors the soil and vegetation recovery to **estimate biodiversity and economic losses**.

To test the system, there will be **four demonstrations** (in Italy, Spain, Greece and France) where all the actors of the emergency management will be involved.

For a resilient society

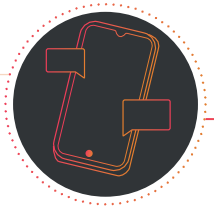
This project aims to involve all stakeholders who act around the key phases of the emergency management cycle, including **citizens** as well as **emergency practitioners**. SAFERS analyses **social media** posts and integrates the crowdsourced data to enhance the capabilities of delineation and forecasting models. An intelligent Chatbot will allow citizens to provide **geolocated real-time information** about in-field conditions. The Chatbot will be also used to **raise awareness** and to enhance self-protective behaviours among citizens.



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.

PHASE A
Prevention & preparedness

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.

PHASE B
Detection & response

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 to better decision-making.

PHASE C
Restoration & adaptation