I-REACT in a nutshell

Due to **climate change**, floods, wildfires and other extreme weather events are becoming more frequent and intense. This scenario poses a challenge for current risk management systems.

I-REACT aims to develop a solution through the integration and modelling of **data coming multiple sources.** Information from European monitoring systems, earth observations, historical information and weather forecasts will be combined with data gathered by new technological developments created by I-REACT. These include a mobile app and a social media analysis tool to account for real-time crowdsourced information, drones to improve mapping, wearables to improve positioning, as well as augmented reality glasses to facilitate reporting and information visualisation by first responders.

With this approach I-REACT will be able **to empower stakeholders** in the prevention and management of disasters. Citizens will be involved in reporting first-hand information, policymakers will be supported in the decision making process, and first responders will be equipped with essential tools for early warning and response.

Overall, I-REACT aims to be a European-wide contribution to build more **secure and resilient societies** to disasters.

THE PROJECT IN NUMBERS

FUNDED BY:
THE EUROPEAN COMMISSION.
SECURE SOCIETY WORK PROGRAMME
(DRS-1-2015)

6.3 MILLION € **9** COUNTRIES

20 PARTNERS **3** YEARS

12 SMEs
3 Research centers
2 Universities
2 Public Companies/Institutes
1 UN body

Italy
France
Spain
Germany
Finland
Austria
UK
Norway
Serbia

Since June 2016
to June 2019

I REACT

Improving Resilience to Emergencies through Advanced Cyber Technologies

A European innovation project to create a system for disaster risk reduction acting at the key phases of the emergency cycle.

Coordinated by:

ISMB
Istituto Superiore Mario Boella

Partners:

GeoVille, Eoxplore UG, TerraneaUG, Alpha, UNESCO, Politecnico di Torino, CELI, JoinPad, Finnish Meteorological Institute, Meteosim, Bitgear, AnsuR, Fondazione Bruno Kessler, Technical University of Wien, Scienseed, CSI Piemonte, Aquobex, Answare, Joint Research Center

Find out more:

Web: www.i-react.eu
Twitter: @ireact_eu
Facebook: www.facebook.com/ireactEU

COLLECTING EMERGENCY INFORMATION FROM MULTIPLE SOURCES

I-REACT will allow for greater emergency anticipation through accurate weather forecasts that, coupled with historical knowledge, satellite and risk maps, crowdsourced reports, and social media information will allow improving emergency management.

Earth Observation

Satellite networks (Copernicus Sentinel-1 and Sentinel-2) to obtain information and map integration from Copernicus EMS.

Social Media data streams

Linguistic analysis tools to extract valuable information about disasters from Twitter in real time.

Unmanned Aerial Vehicles (UAV)

Observations from drones to provide real-time contextual information of affected areas.

Seasonal weather forecast

Forecast models to provide a more accurate more accurate prediction of extreme weather events.

Integration of existing systems

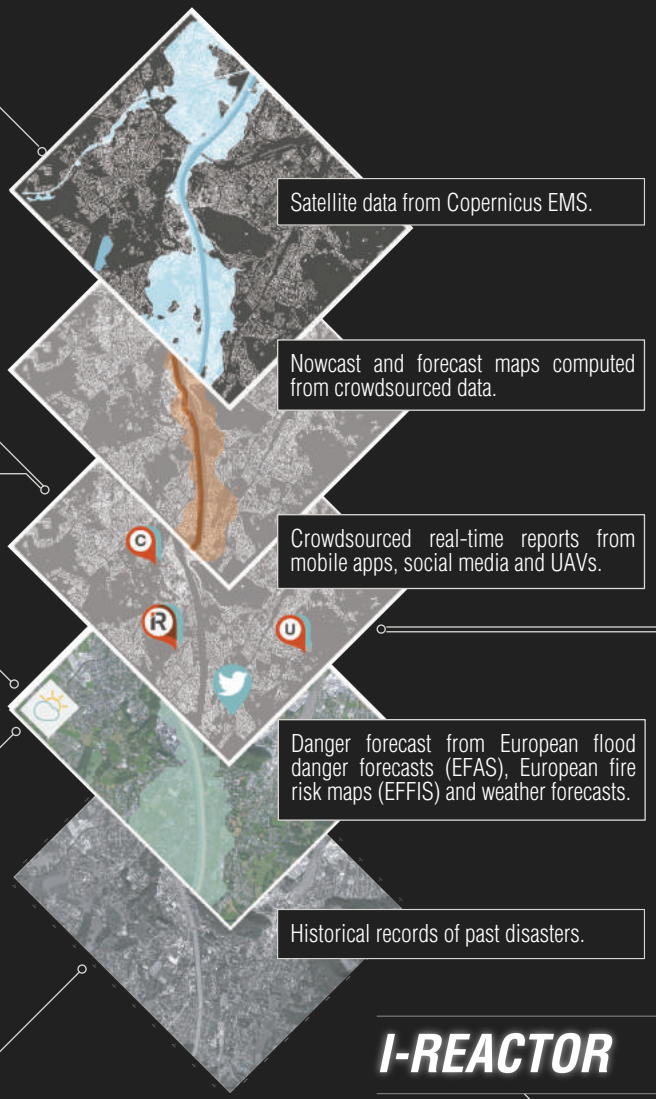
Integration of maps from Copernicus EMS, flood hazard forecasts from EFAS, fire risk and hot spot detection from EFFIS.

Historical data

Analysis of historical disasters to account for past events in the models.

INTEGRATING BIG DATA FOR A BETTER EMERGENCY MANAGEMENT

I-REACT will integrate and process all the emergency information into a big data architecture to make it readily available.



Satellite data from Copernicus EMS.

Nowcast and forecast maps computed from crowdsourced data.

Crowdsourced real-time reports from mobile apps, social media and UAVs.

Danger forecast from European flood danger forecasts (EFAS), European fire risk maps (EFFIS) and weather forecasts.

Historical records of past disasters.

I-REACTOR

EMPOWERING STAKEHOLDERS WITH NEW TECHNOLOGIES TO FIGHT DISASTERS

I-REACT will provide different tools to the most relevant stakeholders in the fight against disasters.

CITIZENS

Citizen App

Cross-platform application to report incidences and provide awareness information.

Augmented reality

Smart glasses to visualize real-time information and submit reports without using their hands.

Wearable

Improved positioning with wearables coupled to Galileo and EGNOS/EDAS.

FIRST RESPONDERS

Professional App

Crossplatform application to provide and gather real-time emergency information.

DSS

Decision-support system to guide emergency management planning and response.

AUTHORITIES