

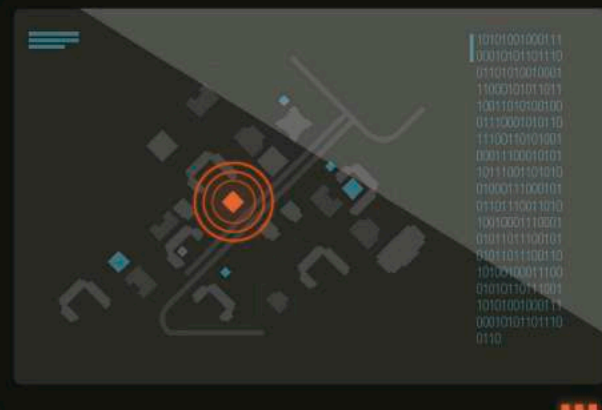
1

# PREVENTION ADVANCED ANALYSIS SYSTEM

I-REACT will provide greater emergency **anticipation** through accurate weather forecasts that, coupled with historical knowledge, satellite and risk maps, crowdsourced reports, and social media information will allow predicting **extreme weather events**.

ONLINE GRAPHICAL DASHBOARD

Simulated scenarios



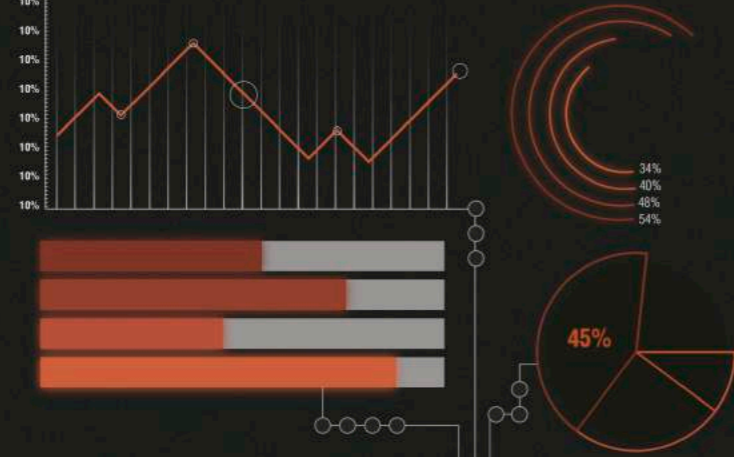
Seasonal & annual weather forecast.



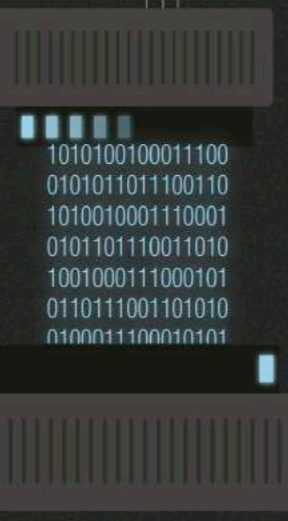
Real-time information



Historical data



A **decision support system** will be created to suggest to decision makers appropriate actions for disaster risk reduction



2

# PREPAREDNESS EARLY WARNING SYSTEM

To allow **greater anticipation** to emergency situations, I-REACT will monitor existing emergency management services, extract data from satellite earth observations, analyse data from social media streams, and develop a cross-platform application for mobile devices to report incidences and provide awareness information.



CITIZENS

Citizens will play an active role and they will be engaged through gamification approaches.

FIRST RESPONDERS

3

# RESPONSE EMERGENCY RESPONSE SYSTEM FIRST RESPONDERS

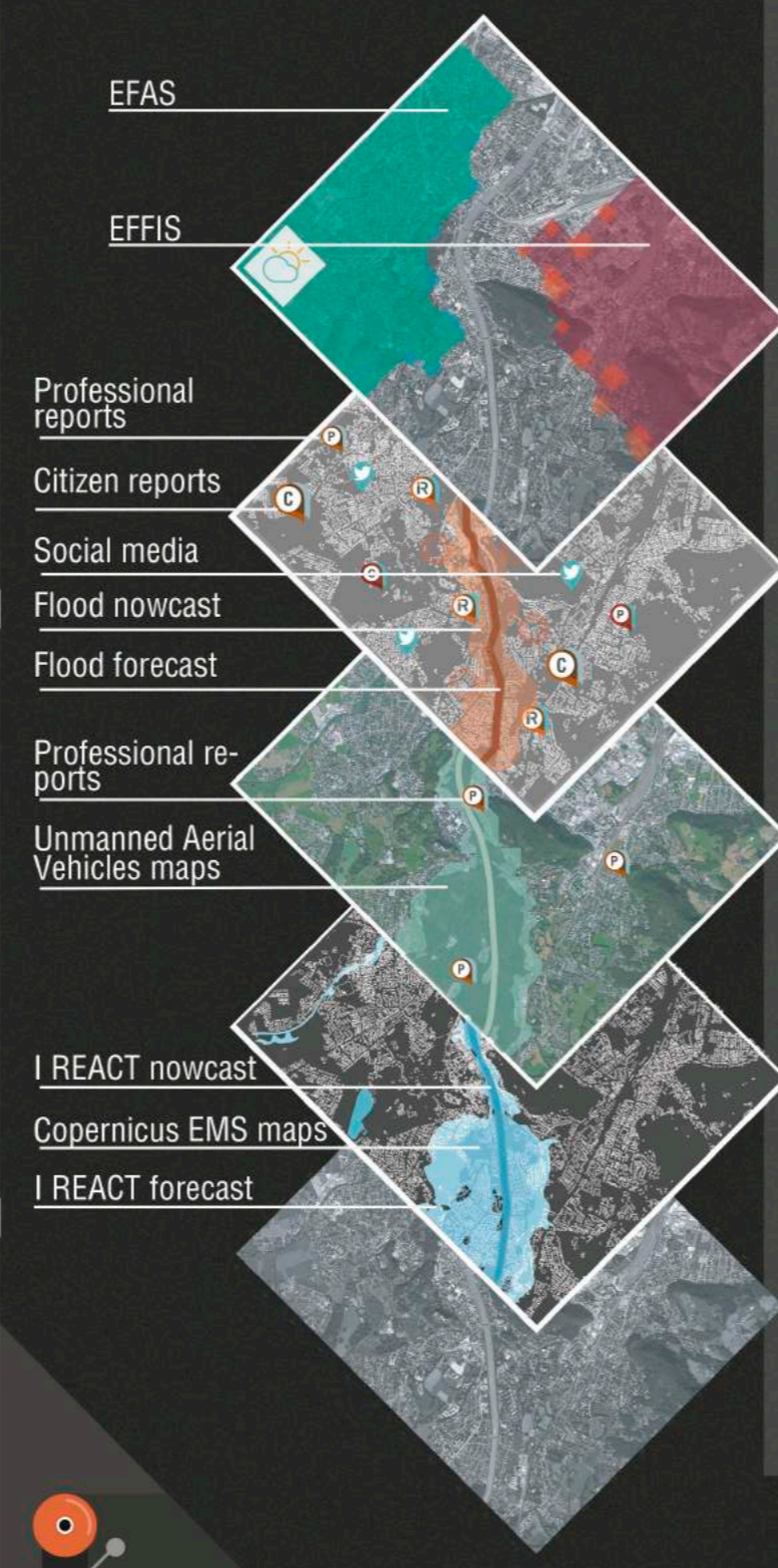
I-REACT will integrate all available information sources to provide a fast and accurate status assessment. To improve the reaction speed, **smart glasses** will be provided to in-field responders to allow them visualise **augmented reality** information and **submit reports** without using their hands. In turn, I-REACT will allow decision makers at control centres to send **real-time** instructions to responders and also send warnings to citizens.



# I-REACT

## Improving Resilience to Emergencies Through Advanced Cyber Technologies

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



## I-REACTOR

**Danger forecasts** such as the European flood danger forecasts (EFAS), European fire risk maps (EFFIS) together with weather forecasts will be integrated in the platform.

**Crowdsourced information** from social media and reporting from first responders or citizens will add real-time in-field information.

**Improved maps** will be achieved through the use of drones (UAVs) and wearables with advanced GPS will provide more accurate positioning.

**Satellite data** from The European Earth Observation programme Copernicus will be a vital resource for I-REACT.

**Historical records.** I-REACT will analyze available historical data about past emergencies and also store all data generated within the platform to improve future emergencies response.

## THE PROJECT IN NUMBERS



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

- Italy
- France
- Spain
- Germany
- Finland
- Austria
- United Kingdom
- Norway
- Serbia



- 2016
- 2017
- 2018
- 2019

- 12 SME's
- 3 Research centers
- 2 Universities
- 2 Public Companies/Institutes
- 1 UN body

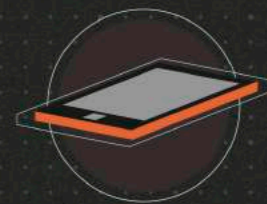
## TECHNOLOGIES

### Social Media data streams



I-REACT will implement a system to extract valuable information about ongoing disasters from the messages published on Twitter.

### I-REACT app



The project will develop a cross-platform application for mobile devices to report incidences and provide awareness information.

### Big Data



I-REACT will integrate several open data sources coupled with all the information the own reporting system will provide.

### Earth Observation



Satellite networks (Copernicus Sentinel-1 and Sentinel-2) will be used to obtain almost real-time information and maps.

### Augmented Reality



Smart glasses will be provided to professionals, who will be able to visualize real-time information and submit reports without using their hands (speech to text).

### Unmanned Aerial Vehicles (UAV)



Will provide real-time contextual information of affected areas.

### Wearables



To improve geo-targeted information, advanced positioning systems with a Galileo ready receiver and EGNOS/EDAS will achieve better accuracy.