



Floods: New technologies to the rescue

- You are more likely to get flooded than burgled. Around 5 million people live in **flood risk areas in England** and Wales, with one in six homes vulnerable to this natural disaster.
- **Citizens** will be able to help fight floods and other natural disasters thanks to I-REACT, an international collaboration project with a UK partner.
- I-REACT will use **social media, smartphones and wearables** to help save lives and lower rescue costs during disasters.

Every year, flood damage costs are in the region of **£1.1 billion** across the UK. Strikingly, **40% of businesses do not reopen** after suffering a catastrophic loss. In the South West, floods in the last ten years have seen 1300 homes without power, more than 4000 homes evacuated, 500 businesses flooded, and 17,000 acres of farming land underwater for more than a month. Now, local citizens will be able to make a difference in their communities thanks to I-REACT, an international project that brings together different **cutting-edge technologies** to improve the prediction and management floods and other natural disasters.

I-REACT will be the first platform to integrate **emergency data** coming from multiple sources, including that from satellites, earth observations, drones, weather forecast or even information from past disasters. Importantly, the project will also use data generated by citizens through their mobile phones. In this way, I-REACT will be able to provide fast and accurate information to policymakers, civil protection services, and citizens, allowing an effective prevention and response to natural disasters.

Citizens protecting citizens: Crowd participation to reduce disaster impacts

A smartphone application is one of the key elements of the new platform. Through this app, citizens and civil protection agents will be able to submit photos and real-time reports. The platform will also analyse messages from social media such as Twitter and extract key information published about ongoing disasters. This approach has proven



very helpful in recent crisis like the 2013 super typhoon Haiyan in the Philippines where Twitter was the single greatest information source for response and recovery efforts.

Smart glasses and other new technologies to improve response

I-REACT will also integrate information coming from mobile phones, wearables, and augmented reality tools from on-site operators. Civil protection services will be equipped with wristbands and smart glasses to visualize information in real-time and submit very accurate reports to the operation centres without using their hands.

Aiding decision-making before and during disasters

All this information will be integrated into a Decision Support System for authorities that will help preventing future disasters, and improve the communication with first responders and citizens during emergencies.

UK Participation

To meet this scientific and technological challenge, the project brings together a multidisciplinary team of international experts that will provide their contribution to a more resilient future. Among them, Aquobex, a British company with over 50 years combined experience and expertise in flood risk management and flood protection

I-REACT, a collective effort to fight disasters

I-REACT (Improving Resilience to Emergencies through Advanced Cyber Technologies) is a 3-year project (2016-2018) funded by the European Commission Horizon2020 programme.

The project is coordinated by the Istituto Superiore Mario Boella of Turin. Consortium partners include: Geoville, EoXplore, Terranea, Alpha Consult, UNESCO (Regional Bureau for Science and Culture in Europe, Venice), Politecnico di Torino, Celi, JoinPad, Fondazione Bruno Kessler, Finnish Meteorological Institute, Meteosim, Bitgear, Ansur Technologies, Technical University of Vienna, Scienseed, CSI Piemonte, Aquobex, Answaretech, and Joint Research Centre (JRC) of the European Commission.



FLOOD STATISTICS

Understanding flood statistics gives us opportunities to manage, prevent and find solutions to reduce the impact of flood risk. Learn about the effects of flooding with the facts and information below.

1. Around 5 million people live in flood risk areas in England and Wales.
2. One in six homes in England are at risk of flooding.
3. Total rainfall in the UK during 2012 was 1,330.7mm, just 6.6mm short of the record set in 2000.
4. 2012 was the UK's wettest year on record.
5. Annual flood damage costs are in the region of £1.1 billion across England.
6. 5.2 million properties are now at risk of flooding in England.
7. You are more likely to get flooded than burgled.
8. Drawing on more resources and investing 10% locally could unlock 90% of central Government funding for flood risk in communities.
9. Only 41% (276,000) of people eligible for free flood warnings are registered to receive them.
10. The Flood and Coastal Resilience Partnership Fund controls how money is allocated to community projects.
11. Flash floods can bring walls of water from 10 to 20 feet high.
12. 25% of flooding occurs outside areas formally designated as being flood prone.
13. 40% of businesses do not reopen after suffering a catastrophic loss.

Additional information

Official website: www.i-react.eu

Video animation: www.youtube.com/watch?v=4t5ScCh6XU0

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