

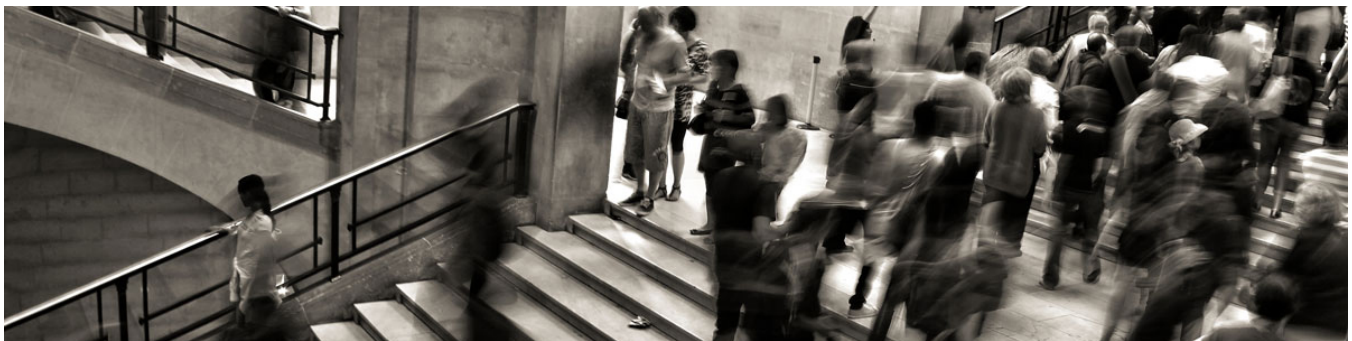
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Science in support of EU Disaster Risk Reduction policies in the area of weather and climate extreme events

14:00 WEDNESDAY 29 MAY

SP027

PA



Philippe Quevauviller (Belgium) 1; Daniel Sempere Torres (Spain) 2; Claudio Rossi (Italy) 3; Anastasios Karakostas (Greece) 4

1 - European Commission, DG HOME; 2 - University of Catalunya; 3 - ISBM; 4 - Centre for Research and Technology Hellas

Extreme weather and climate events, interacting with exposed and vulnerable human and natural systems, can lead to disasters. According to IPCC, some types of extreme events (e.g. flash floods and related landslides, storm surges, heatwaves, fires, including vegetation fires) have increased in frequency or magnitude, and in the meantime populations and assets at risk have also increased, leading to enhanced disaster risks. In order to better forecast and manage the immediate consequences of weather- and climate-related disasters, in particular regarding emergency responses, improved measures and technologies are needed.

The H2020 Secure Societies Programme has launched a call in 2015 to investigate the potential of current and new measures (including local measures) and technologies to enhance the response capacity to extreme weather and climate events affecting the security of people and assets. The aim was to focus on emergency management operations and cover the whole crisis management, linking awareness and early warning to effective responses within society and coordination with first responders, including the use of adapted cyber technologies to gain time and improve coordination in emergency situations.

The call resulted in three key projects, namely ANYWHERE, I-REACT and BeAWARE, which are subject to the proposed session, which are exploring the links and eventual adjustments of the warning and response systems facing the observed or anticipated changes in frequency and intensity of extreme climate events. In support of EU policies such as the Union Civil Protection Mechanism, the Climate Change Adaptation Strategy, the Flood Directive, the projects are developing more effective and faster emergency

responses to extreme weather and climate events, faster analysis of risks and anticipation, and publicly available online now- and fore-casting systems for disasters triggered by (extreme) weather conditions. They are aiming to contributing to an improved coordination of emergency reactions in the field and capacity to provide adequate emergency responses to extreme weather and climate events. The three projects are involving key actors in policy-making, science, industry as well as practitioners (civil protection units, fire brigades, emergency units), which should guarantee an efficient uptake of research outputs turned towards enhancing shorter reaction time and higher efficiency of reactions, and thus enhancing citizen's protection and saving lives.

Target audience

The session will be opened to different actors involved in disaster risk management research and policies, namely policy-makers (from UN-ISDR, EU institutions and Member States), scientists from different disciplines, practitioners (in particular civil protection units, fire brigades, emergency units), and industry/SME representatives.

Three major projects resulting from a H2020 call for proposals will participate in the session under the umbrella of a general presentation of the Community of Users on Secure, Safe and Resilient Societies with a focus on climate-related disaster.

Proposed format for the session

The session will be of 1h45 length with 4 keynote lectures of 15-20 minutes each followed by a debate of 30 minutes with the audience. It will be moderated by Anabela Gago, European Commission, Head of Unit of the H2020 Secure Societies Programme. Speakers will be coordinators of 3 projects resulting from a call focused on climate / weather extreme events, namely ANYWHERE by Daniel Sempere (Univ. Catalunya, Spain), I-REACT by Claudio Rossi (ISBM, Italy), BeAWARE by Anastasios Karakostas (Centre for Research and Technology Hellas, Greece), and Philippe Quevauviller (European Commission, DG HOME) presenting the Community of Users on Secure, Safe and Resilient Societies with focus on climate-disaster related events.

Contributing Authors abstracts

1. Daniel SEMPERE, Universitat Politècnica de Catalunya (Spain)

The ANYWHERE project aims to **empower exposed responder institutions and citizens to enhance their anticipation and pro-active capacity of response to face extreme and high-impact weather and climate events**. This is achieved through the operational implementation of **cutting-edge innovative technology** as the best way to enhance citizen's protection and saving lives. The project is developing and implementing a **Pan-European multi-hazard platform** which provides a better identification of the expected weather-induced impacts and their location in time and space before they occur. This platform will support **a faster analysis and anticipation of risks prior the event occurrence, an improved coordination of emergency reactions** in the field and help to **raise the self-preparedness** of the population at risk. This platform is adapted to provide **early warning products and locally customizable decision support services proactively targeted to the needs and requirements of the regional and local authorities, as well as public and private operators** of critical infrastructures and networks. The platform prototype is demonstrated in pilot case studies. Its **market uptake will be ensured by the cooperation with a SME and Industry Collaborative Network**, covering a wide range of sectors and stakeholders in Europe, and ultimately worldwide.

2. Claudio ROSSI, ISBM (Italy), I-REACT (Improving Resilience to Emergencies through Advanced Cyber Technologies)

A big data platform for natural hazard resilience. Climate change is estimated to increase the likelihood of events such as floods, due to extreme rainfall and rapid snow melting, and also wildfires because of longer dry and hot seasons. To better adapt to such adverse climate change effect and meet sustainable development goals, the I-REACT project is developing a big data system to improve the resilience to natural hazards at the prevention, preparedness and response phases. I-REACT couples together several information sources, including Copernicus-EMS maps, early warnings from EFAS and EFFIS, Satellite-Data (Sentinel), Open-Data, UAVs images and videos, social-media and crowdsourced information, (i.e. real-time reports from the ground coming from emergency responders and citizens). All this information is merged and processed to

provide added-value services and products, such as a decision-support system for authorities and a mobile application for citizens. Wearable devices and smart glasses can be provided first-responders, who would benefit from high-precision Galileo positioning and Augmented Reality to make hands free reports.

3. Anastasios Karakostas, Centre for Research and Technology Hellas (Greece)

In every disaster, incident time is the enemy, and getting accurate information about the scope, extent, and impact of the disaster is critical to create and orchestrate an effective disaster response. The main goal of beAWARE is to provide support in all the phases of an emergency incident. More specifically, beAWARE introduces a novel framework for every aspect of crisis management that integrates weather forecasting, early warnings, transmission of the emergency data, aggregated analysis of multimodal data and manages the coordination between the first responders and the authorities. The overall context for beAWARE lies in the domain of situational awareness and command and control. The first phase concerns the forecast of the extreme condition and the relevant preparations. Situational awareness means being able to accurately determine what has happened, what is happening now, and what will come next, all in order to plan and coordinate the most effective response possible with the resources available. The observation phase will lead to an orientation phase suggesting both an individual as well as collective ‘cognition’ orientation to data that is sensed and communicated. Once orientation to the data occurs then a decision is made, ultimately resulting is the final step, which is ‘act’.

4. Philippe Quevauviller, European Commission, DG HOME – Community of Users on Secure, Safe and Resilient Societies

The management of various threats to our societies, including disaster risks (natural or man-made), including extreme weather and climate events, is governed by a number of international, EU and national policies covering different sectors and operational features, e.g. preparedness and prevention, detection and surveillance, and response and recovery. A range of research, technological developments and demonstration, as well as capacity-building, training and education projects, are striving to support the implementation of these policies and related features. However, the complexity of the

policy framework and the wide scope of supporting initiatives often lead to a lack of awareness about policies and/or project outputs by the ‘users’, namely policy makers, scientists, industry (incl. SMEs), practitioners, and civil society. So far there is little connection between outputs and outcome, the implementation of relevant outputs is too rare, hence the impact of security research is still limited. In response to needs expressed by different actors for improving exchanges of information and build up synergies among different types of activities (research, capacity-building, education and training, a ‘Community of Users on Secure, Safe and Resilient Societies’ has been developed and has become a recognized mechanism to exchange information both within the EU institutions and the many different actors involved in safety and security risk management.

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About ECCA

The biennial European Climate Change Adaptation conference is convened by projects that have received funding from the European Union’s Horizon 2020 Research and Innovation Framework Programme.



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