

Leveraging social media for flood emergency management: an experience in Campania region (southern Italy)

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Campania is the Italian region with the highest population density (419 inhabitants/km²). Almost 20% of its territory (13669 km²) is exposed to severe hydrogeological risk scenarios, triggered by extreme rainfall events with duration ranging from a few tens of minutes to several hours. Many of these risk scenarios can only be mitigated by non-structural measures, which are mainly designed to increase the resilience of the exposed communities. Several studies have evidenced that the effectiveness of civil protection actions can be enhanced by using social media for disseminating and collecting information relevant for crisis preparedness, response and recovery. However, the application of social media in the management of hydrogeological risks is still in its infancy. The civil protection of Campania Region, as part of a FP7 project called SUPER (Social sensors for secUrity Assessments and Proactive EmeRgencies management), has been validating an integrated framework enabling optimal blending of social media in the emergency management processes. The SUPER project is a joint effort of social media experts (including social network providers) and security experts (including security and civil protection agencies), towards introducing an integrated and privacy-friendly approach to the use of social media in emergencies and security incidents. As part of the project outcomes, the “SUPER platform” has been developed. It consists of a set of social media processing components integrated in a Common Operational Picture, designed for supporting security and emergency management. A demonstration was primarily setup to evaluate how the SUPER platform can effectively facilitate the exploitation of social media data for improving civil protection actions during a simulated emergency scenario. To this purpose, a civil protection exercise took place in the city of Sorrento (Naples, Italy), involving tens of volunteers and emergency operators. The simulated emergency scenario was represented by simultaneous flash floods associated with shallow landslides, triggered by a severe thunderstorm in the city centre of Sorrento. Volunteers on the field simulated the social media engagement during such an event. The SUPER platform was successfully evaluated with respect to the following real-time operations: i) filtering the relevant information posted on Twitter during the simulated emergency; ii) geo-localising the relevant information within the Command Operational Picture; iii) enhancing the situation awareness at Command and Control level.