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Integrated Disaster Management system based on geographical information and mobile communication networks

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Calabria is one of the region of Italy most exposed to natural hazards due to the complex hydro-geomorphological nature of the territory. The major threats include landslides, floods, storms, droughts and earthquakes. Most of these risks, when combined with intense rainfall and a high levels of territorial vulnerability, usually result in disasters and damages to the population.
In these scenarios, the Calabria Region has re-organized the system of functional procedures used in civil protection activities, through an implementation of an integrated System that includes not only information technology (IT), but also social communication networks and organising structures for emergency response. The complexity of the system, the dynamic of the environmental risk, in which the system is embedded, and its technical constraints imply important coordination activities.
The system is devoted to support all phases of the disaster management cycle (before, during and after the event). The main aim of all the activity is to make the alarm system and regional management of emergencies more efficient by a proper simplification and optimization of communication processes.
The system allows the management of several aspect such as: disasters events, territorial data referred to the human and instrumental resources, and decision-making processes, based on the type of risk. Moreover an interactive communication channel with citizens has been developed with the purpose to promote civil protection culture in the population, to strengthen the crowdsourcing and to increase its resilience.