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Crowdsourcing engagement and applications for communities within crisis events

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Civil protection attitude is a changing pattern within natural hazards, deploying responsibilities from central government to local authorities. The competence of volunteers and the awareness and involvement of local inhabitants are key points for prevention and preparedness. Citizens and volunteers become first actors of civil protection, toward context-specific strategies of surveillance and territorial surveys. The crowd-mapping technology includes a mobile solution tested insight trained communities, as participation within disaster response. The platform includes also a user-friendly dashboard for data gathering and analysis in multi-hazard realities, tested with pilot case studies. Usability and gradual innovation of platform are continuous granted by cloud dataset and bugfixing controls. The first module focuses on flood processes gathering data from local and trained population, for awareness and long-term preparedness. The second module integrates field survey of several volunteers within rescue squads, combining geolocations and comparing dataset collected in pre-emergency steps in urban case studies. The results include an easy-to-use data interface for crisis management, a tested support within crisis combined with personal awareness, continuously updated and customized. The development provides a version for Android 4.0 onward, the web application combines a cloud architecture with a relational database and web services, integrated with SDK cloud notification. The wireframes planned two accesses for a Citizens Kit and a Volunteers Kit, synchronized with a common dashboard. The follow up includes the integration between mobile solutions with sensors for dynamic update and data export for GIS analysis. The location-based services uses location data to monitor parameters and control features within natural hazard. A human sensor network is the aim, integrating sensor measurements with external observation as baseline of future modelling. Point data like humidity, temperature and pressure are geolocated and real-time. Human sensors reveal a massive approach of crowdsourcing, and user-friendly dashboards appears as solid control of data management to support resilience and quality of risk assessment.