MAppERS for crowdsourcing. Citizens and volunteers as human sensors

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Abstract

MappERS\(^1\) (Mobile Application for Emergency Response and Support) is a EU project funded under programme 2013-2015 Humanitarian Aid and Civil Protection, ECHO A5. The project deals with capacity of human sensors towards smartphone application (SA) in the contest of prevention and crisis support for natural hazards. Citizens and volunteers are first actors of civil protection and the crowdsourcing creates local and context-specific strategies of surveillance and territorial management. The SA splits into module MAppERS-V for volunteers, and module MAppERS-C for citizens re-designed according to methodological and logical testing gained during pilot study. People involved in training and piloting fulfills a long term objective of participation and crowdsourcing as actors of prevention of hazards, according to the priorities set by the Hyogo Framework, reducing costs of emergency management and promoting responsibilisation of the population. Training curricula for citizens and volunteers will promote awareness, territorial knowledge and specialized jargon to communicate hazard-relevant information toward smartphone. For a meaningful SA a review of best practices of information scheme is compulsory. An analysis on Graphical User Interface (GUI) adopted within SA for natural hazards offers a baseline of communication scheme for MAppERS frame. Following Quesenbery (2003) the usability as design principle handles five components. The efficiency is the speed with which users achieve their goals, the effectiveness highlights the completeness and accuracy with which users achieve their goals, the engagement reveals the level to which the style of the interface makes using the application a pleasing experience. Furthermore the easiness to learn describe how simple it is to start using the interface, and get a deeper understanding of its capabilities. The error tolerance finally shows how the design prevents users from committing errors, and how it helps in correcting them when they occur. The review strengthened criteria for layout, navigation, accessibility, icon setup and text guidelines design (Fowler & Stanwick, 2004; Extron, 2010; Garrett, 2011; Wong, 2011). The development is proceeding for Android 4.0 onwards, covering 82.6% devices as of today. The Web Application includes a Cloud Architecture, a Relational Data Base and Web services, integrated with a Cloud Notification SDK to send push notification. The Mobile App Android includes an app Skeleton, the communication structure

\(^1\) http://www.mappers.eu/
(SMS, Emails and phone calls). The bug-fixing and training will be set during piloting and the crowdsourced becomes a continuous source of development, testing and updating each smartphone components. The wireframe contains a screen for registering and login common for both modules. The access and tools are later split for the two modules. MApPERS-C proposes a Personal Flood Plan toolkit. Users are citizens, voluntary registered and able to create own set of prevention measures, sharing geo-located information during critical step before flooding events. MApPERS-V is a Danger Survey toolkit for rescue crew, to collect and organize real-time and standardized information for damages during crisis. The first draft of modules provides options to customize dropdown lists and sliding tools for end-users, enlarging the quality of the application based on local experts and witnesses. The expected results are: a) an easy-to-use interface for “human-data” in crisis management, b) a maximised utility of peer-produced data gathering, c) the development of human resources as technical support d) a self-based awareness improvement.

References