Geophysical Research Abstracts
Vol. 14, EGU2012-7404, 2012
EGU General Assembly 2012

Development of a Mobile Application for Disaster Information and Response

B. Stollberg

Joint Research Centre of the European Commission, Institute for the Protection and the Security of the Citizen, 21027 Ispra, Italy (beate.stollberg@jrc.ec.europa.eu)

The Joint Research Centre (JRC) of the European Commission (EC) started exploring current technology and internet trends in order to answer the question if post-disaster situation awareness can be improved by community involvement. An exploratory research project revolves around the development of an iPhone App to provide users with real-time information about disasters and give them the possibility to send information in the form of a geo-located image and/or text back. Targeted users include professional emergency responders of the Global Disaster Alert and Coordination System (GDACS), as well as general users affected by disasters.

GDACS provides global multi-hazard disaster monitoring and alerting for earthquakes, tsunamis, tropical cyclones, floods and volcanoes. It serves to consolidate and improve the dissemination of disaster-related information, in order to improve the coordination of international relief efforts. The goal of the exploratory research project is to extract and feedback useful information from reports shared by the community for improving situation awareness and providing ground truth for rapid satellite-based mapping. From a technological point of view, JRC is focusing on interoperability of field reporting software and is working with several organizations to develop standards and reference implementations of an interoperable mobile information platform.

The iPhone App developed by JRC provides on one hand information about GDACS alerts and on the other hand the possibility for the users to send reports about a selected disaster back to JRC. iPhones are equipped with a camera and (apart from the very first model) a GPS receiver. This offers the possibility to transmit pictures and also the location for every sent report. A test has shown that the accuracy of the location can be expected to be in the range of 50 meters (iPhone 3GS) and respectively 5 meters (iPhone 4). For this reason pictures sent by the new iPhone generation can be very well geo-located. Sent reports are automatically integrated into the Spatial Data Infrastructure (SDI) at JRC. The data are stored in a PostGIS database and shared through GeoServer. GeoServer allows users to view and edit geospatial data using open standards like Web Map Server (WMS), Web Feature Server (WFS), GeoRSS, KML and so on. For the visualization of the submitted data the KML format is used and displayed in the JRC Web Map Viewer. Since GeoServer has an integrated filter possibility, the reports can here easily be filtered by event, date or user.

So far the App was used internally during an international emergency field exercise (Carpathex 2011, Poland). Based on the feedback provided by the participants the App was further improved, especially for usability. The public launch of the App is planned for the beginning of 2012. The next important step is to develop the application for other platforms like Android. The aftermath of the next disaster will then show if users will send back useful information. Further work will address the processing of information for extracting added value information, including spatio-temporal clustering, moderation and sense-making algorithms.