



# 1<sup>st</sup> JRC Crisis Technology Workshop and ACRIMAS Pilot Case

## Mobile Interoperability for International Field Deployment

12-13 March 2012

### Workshop Summary

The workshop on Mobile Interoperability for International Field Deployment took place in the European Crisis Management Laboratory (ECML) of the Joint Research Centre in Ispra, Italy, from 12 to 13 March 2012. 37 participants coming from 11 EU countries and Norway, Brazil and US, 3 UN agencies (Office for Coordination of Humanitarian Affairs (OCHA), World Food Programme (WFP) and Development Programme (UNDP)) and 2 NGOs (MapAction, Technology Sans Frontières) attended the workshop. The workshop's purpose was to measure the added value of mobile assessment technology for rapid situation assessment in international emergency operations.

The simulated situation was comparable to a natural disaster outside the EU. Many teams arrive and are coordinated by an On Site Operations Coordination Centre (OSOCC), led by OCHA. The main objective was the assessment of a rather stable situation shortly after the event occurred. Seven mobile assessment systems were deployed among the participants and needed to provide real-time data to the OSOCC, through a third party mapping system. Information assessment categories were only revealed on the spot in order to test technical and semantic interoperability of all systems. In parallel, a traditional paper-based assessment was performed for benchmarking purposes.

The evaluation of the experiment was done collaboratively by 35 practitioners, field experts, strategic level personnel working with national and international headquarters of civil protection and crisis management, 2 visiting scientists, and 8 JRC staff. This ensured real, down-to-earth criticism on the usefulness of mobile systems and their interoperability.

### Major Outcomes

The experiment showed that both paper and electronic OSOCCs reached a similar situation awareness in the same time, but only the electronic OSOCC had products available as sharable electronic maps and documents. Mobile technology is mature and can be deployed in an interoperable way.

All 7 participating field systems with a total of 20 devices successfully interfaced with the map viewer application [[http://dma.jrc.it/b\\_map\\_lite/?application=ECML\\_Workshop\\_1](http://dma.jrc.it/b_map_lite/?application=ECML_Workshop_1)] in the ECML by either providing KML or GeoRSS feeds. In this sense, interoperability was achieved. The collection of information by field units was remarkably quick and easy and incoming information was available in real-time. All data was visualized effectively on the shared map on a wall sized display.

"It's a dream to work with real-time data", a representative of World Food Programme said, "but more tools are needed to exploit the information." Data recorded with different tools has to be merged and moderated. The need to modify data was identified. To achieve this, provided data has to be either imported into a new system or changed in each of the field units' applications/systems. This is an area where there is a lot of room for improvement. The development of moderation software and/or a suitable API (application programming interface) is definitely one future direction of research.

Information managers in coordination centres need also to be able to develop a situation over time. This requires keeping track of in- and outgoing information, categorizing types of information, and producing a series of situation reports. A supporting logging tool might be very useful. Software that could help to prepare situation reports or even

new ways of preparing situation reports are interesting topics to be tackled. Ideally, mentioned moderation tools combined with mapping tools should be capable to create situation reports continuously.

The participants encouraged a follow-up of this workshop using table-top exercises, modules in existing training programmes, etc. A follow-up workshop should be held after more processing tools have been developed and the next phase can be demonstrated.

## Participating Systems

The following 7 systems participated in the experiment with active attendance of the respective technology providers. Please find more information on the workshop website: [<http://portal.gdacs.org/Expertworkinggroups/Mobiletechnology/2012MobileInterOpWorkshop/tabid/183/Default.aspx>].

### Alice by Astri Polska Sp. z o.o., Warszawa, Poland

*ALICE (Adaptive Layers for Information and Collaboration in Emergency) allows for rapid exchange of information between the various rescue units in the field and between field units and headquarter. ALICE provides a variety of information (GIS data, aerial and satellite images, units' localization, meteorological data, etc.) directly to the user in the field. ALICE was created with the strong support of Polish firemen and was designed according to the philosophy that to share an operational picture and to support decision making a shared geographic environment is crucial.*

[cf. <http://www.astripolska.pl/0,1,93.html>]

### ASign by AnsuR, Fornebu, Norway

*ASIGN (Adaptive System Image-communications in Global Networks) is an innovative Image Communications Solution, providing the most efficient transfer of high quality photos, videos and other sensory data. The fundamental challenge in digital communications form the basis for ASIGN: The need for rapid access to high quality visual data from remote field sites anywhere in the world. [...] ASIGN allows all images the observer wants, in any resolution required, to be sent to an operations center.* [cf. [http://www.ansur.no/index.php?option=com\\_content&view=article&id=100&Itemid=99](http://www.ansur.no/index.php?option=com_content&view=article&id=100&Itemid=99)]

### EpiCollect by Imperial College, London, United Kingdom

*EpiCollect.net provides a web application for the generation of forms and freely hosted project websites [...] for many kinds of mobile data collection projects. Data can be collected using multiple mobile phones running either the Android Operating system or the iPhone (using the EpiCollect mobile app) and all data can be synchronised from the phones and viewed centrally (using Google Maps) via the Project website or directly on the phones.*

[cf. <http://www.epicollect.net/>]

### Field Reporting Tool (FRT) by JRC, Ispra, Italy

*The Field Reporting Tool supports crisis situation awareness and post crisis needs assessments. During all phases of crisis management, it facilitates exchange data between headquarters and field teams in the most efficient and secure way to ensure timely shared situation awareness, and to better serve the field teams with shared situation assessments. All the information is stored in a common repository and shared among all the crisis players through a web portal and other geographic aware systems.*

### GINA System by GINA Software s.r.o., Czech Republic

*GINA is an interactive map software for mobile devices permitting navigation in difficult terrain, teams coordination, and effective exchange of geographic information. Due to its features, GINA is destined for crisis management centres, rescue teams and other groups operating in difficult conditions. [...]GINA is easy to control, because the use of the application has been inspired by an ordinary paper map. Just like you can draw on a map with a pen and stick a pin of various colours in it, GINA enables you to insert your own drawings [...].*

[cf. <http://www.ginasystem.com/gina-system.htm>]

### **iGDACS by JRC, Ispra, Italy**

*iGDACS provides near real-time information about natural disasters and gives the possibility to send back information in the form of a geo-located image and/or text. The Global Disaster Alert and Coordination System (GDACS) is a cooperation framework between the United Nations, the European Commission and disaster managers worldwide to improve alerts and information exchange. iGDACS is intended to tap the abundant information about disasters available from people who actually experience them. Reports of the iGDACS users are used to improve the overall situational picture. [cf. <http://i.gdacs.org/>]*

### **Open Data Kit by University of Washington and Google (presented by World Food Programme, HQ office in Rome)**

*Open Data Kit (ODK) is an open source data collection tool for Android phones, developed by the University of Washington with the collaboration of Google. It has developed a large user community and is currently in use in many developing and developed countries. It consists of 3 components: "build" for building the data collection forms in the XForms format, "collect" which is the app for the data collection that runs on android phones and transmits the data using mobile internet connection, and "aggregate" which is a server application to receive, publish and export the data. Aggregate can be installed on the cloud-based Google Application Engine, or on a local server. The World Food Programme is currently developing customised versions of Open Data Kit and of FrontlineSMS to enable ODK to work with SMS-based text messaging and to enhance some of the mobile and server's data collection capabilities. [cf. <http://www.opendatakit.org>]*

*For more information please contact:*

Alessandro Annunziato    [alessandro.annunziato@jrc.ec.europa.eu](mailto:alessandro.annunziato@jrc.ec.europa.eu)

Tom De Groeve            [tom.de-groeve@jrc.ec.europa.eu](mailto:tom.de-groeve@jrc.ec.europa.eu)

Markus Rester            [markus.rester@jrc.ec.europa.eu](mailto:markus.rester@jrc.ec.europa.eu)