

ACRIMAS Pilot Case

1st JRC Crisis Technology Workshop on Mobile Interoperability for Crisis Management

12-13 March 2012

Technical Framework Requirements

Data Exchange Formats

This workshop focuses on interoperability of mobile devices for crisis management, so the technological requirements for exchanging information are one key parameter. This experiment should be as realistic as possible, i.e. the need for ad hoc collaboration of different teams arriving on the scene with different systems, and this includes also the team of the On-Site Operations Coordination Centre (OSOCC) with their respective Information and Communication Technology (ICT) systems. Therefore common and recognized data interchange standards have to be chosen. In this workshop all participating systems should be able to provide either **GeoRSS** or **KML** feeds to be "consumed" by the OSOCC.

Standard	Reference
GeoRSS simple *	http://georss.org/simple
KML	http://www.opengeospatial.org/standards/kml/

Table 1: Supported Formats. * Please note that GeoRSS gml is currently not supported.

In case a given system cannot provide the mentioned formats, technology providers may contact JRC for applying XSLT stylesheets or check if GeoServer (<http://geoserver.org>) could be installed on one of their servers as a middle layer and provide converted output on the fly.

Shared Map of OSOCC / ECML

In the OSOCC all information streams will appear on a single map utilizing OpenLayers:

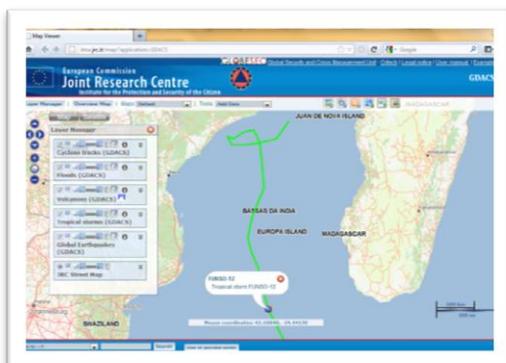


Figure 1: <http://dma.jrc.it/map/>



Figure 2: European Crisis Management Laboratory

In an ideal setup the OSOCC receives real-time information from the field teams on URLs provided to the OSOCC by the technology providers. Most systems will probably be able to provide this. The field area is well covered by GSM

networks. In some areas on site it is possible to find hotspots (i.e. open WLANs in buildings with meeting rooms). In the case of no available WLAN or GPRS connectivity the mobile devices should be capable to record and store the gathered information which then has to be made accessible to the OSOCC on a URL of choice upon return from the field missions.

Beside the shared map there is room for display of the mapping systems of the different technology providers which probably have more functionality, like filtering etc. For the system to be displayed on the big wall screen of the OSOCC a URL to a web based system has to be provided. There is also limited room for the placing of proprietary systems on laptops or the like. Provided internet connectivity in the OSOCC: WLAN.

Feed Validation

Please check in advance whether the map application at <http://dma.jrc.it/map/> is capable to visualize your feed by adding them to the map with the buttons "Add external GEORSS file" or "Add external KML file" in the middle on top of the page. Also make sure that your feed is valid by checking it with a validator, e.g. <http://googlemapsapi.blogspot.com/2007/06/validate-your-kml-online-or-offline.html> or <http://www.feedvalidator.org/>. In case of problems please contact JRC to assist in looking into the issue.

Categorization, Tagging, and Keywords

For the OSOCC team not only technical but also semantic interoperability will be an issue. The readability and utility of a single map with all incoming streams will depend on shared vocabularies or at least negotiated "translations" of used categorizations. The experiment will account for this by providing last minute information on +/- 5 categories to use before the teams deploy to the field. In case you provide a KML feed you are in control of the symbols. Being able to adapt to the requested information would help the OSOCC team in sense-making considerably. In case of GeorSS either the system is adaptable to provide the required tagging or the meaning of the used tags has to be negotiated with the OSOCC.

Bi-Directional Information Sharing

Though not part of the main focus of this workshop, the OSOCC might also be able to provide an aggregated feed of all team activities. This back channel could be consumed by the field systems, thus providing an overview of the current situation to the teams in the field and enabling them for instance to give advice to the OSOCC based on their experience.

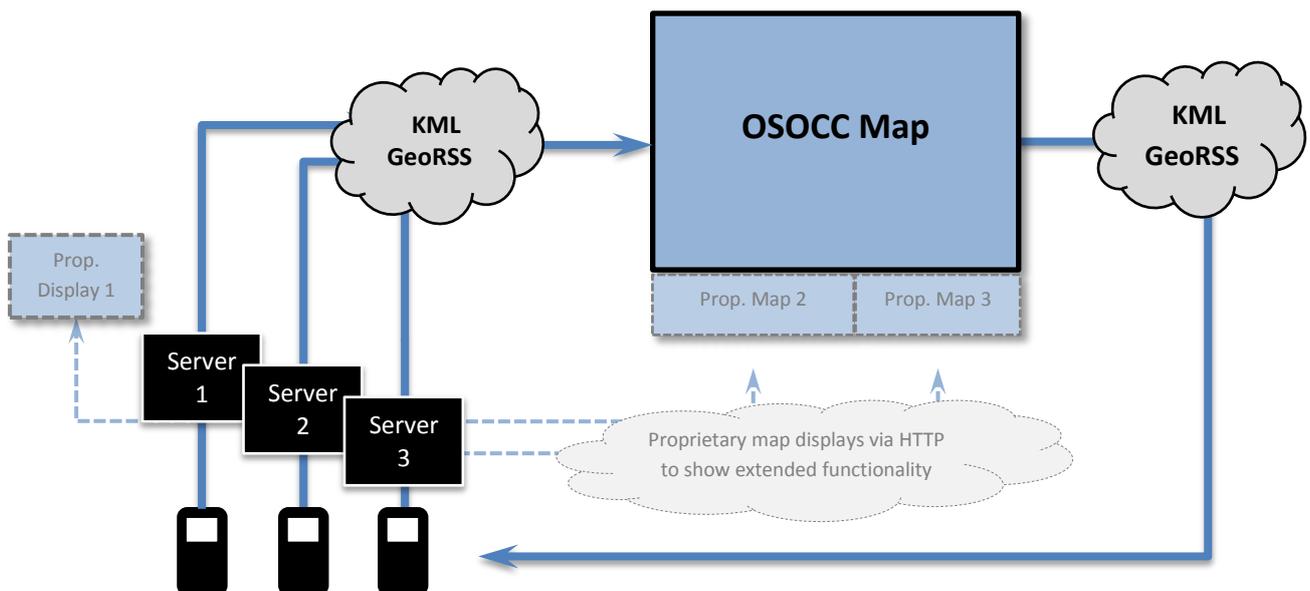


Figure 3: System of Systems Overview

Scenario

Storyline

The simulated situation is comparable to a natural disaster outside the EU. Many teams arrive and one of the first international organizations being on site coordinates all activities. The main objective is the assessment of a rather stable situation shortly after the event occurred. There are no tactical security issues like public unrest, riots, or plundering that have to be dealt with. The focus is on collecting categorized information to get the big picture of the situation.

On 12.03.2012 at 0037 hours local time a major earthquake hit the Varese area. The small town of "JRC Ispra" was particularly affected. Several buildings have probably collapsed and many are likely to be seriously damaged. There are rumors that some areas and districts are especially struck having massive damages to the houses.

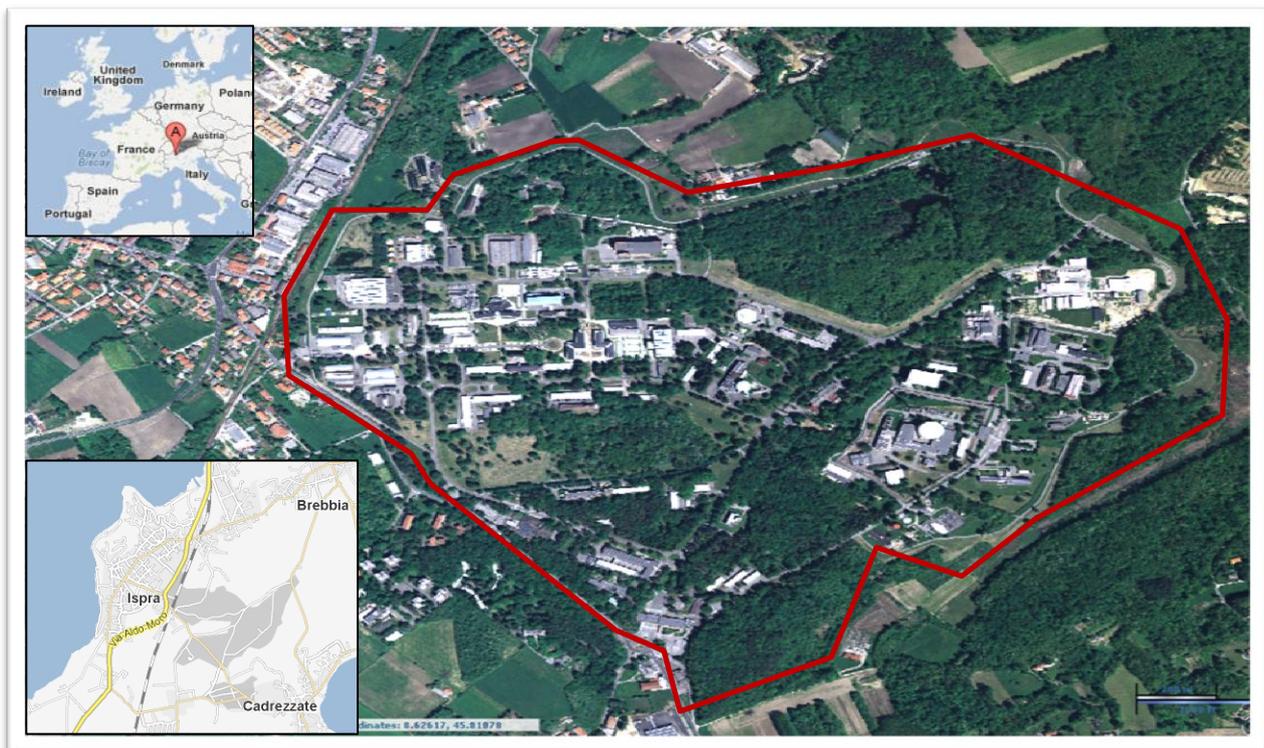


Figure 4. Overview of the JRC Ispra site.

Workflow

The OSOCC leader will announce the categories of information needed for assessment and planning, e.g. need for water purification equipment, spotted spontaneous refugee camp. Also the aggregated feed, if available from the OSOCC, is communicated to the field teams.

Technology providers then will set up their systems. Depending on the system 15 minutes should be enough. Customization, configuration, and negotiation on the fly for interoperability is one key element in in this exercise.

About 5-10 teams – depending on number of participants and number of available mobile systems – will be formed and will deploy to the field with mobile devices to assess the situation. A reference team will also collect data without the help of electronic equipment.

The technology providers will have 15 minutes to train the users of the field teams. In case of mature systems and multiple available devices of a given system one untrained team should be able to give valuable input on usability issues. Other field teams using more experimental systems might also be accompanied by one of its technology

provider. This training not only covers the technological aspects of the systems but also the semantics of the information to be collected. Some systems might have to negotiate the meanings of categories to be used in the field to the users and the OSOCC.

The field teams will be deployed in different sectors on the JRC site. There they will find clearly visible "markers" on situations they should report. An overview paper map of the locations of the markers will be available. The OSOCC also reserves the right to communicate change in plans to the field teams during the exercise. The OSOCC will try to make sense of all incoming information and draft first steps of action following the assessment.

After all field teams have arrived back and the OSOCC presented its conclusions, a hot wash-up discussion will focus on the technology issues experienced in the exercise.

Schedule

Monday, 12.03.2012

Meeting Room 2, Bldg. 36b

09:00 Introduction: JRC, Acrimas, UN, DEMA
10:00 Introduction: Workshop Focus, Goals, Methodology
11:00 Presentations of Technology Providers (15 mins each)
12:30 Lunch Break

ECML / Crisis Room, Bldg. 68

14:00 Setting up the OSOCC, Team Creation, Assignment of Tasks (OCHA), Marking System
Field teams of minimum 2 people: 1 with mobile device, 1 using paper.
14:15 Set Up of Systems, Training of Users
14:30 Deployment of Teams to the Field
15:45 Meeting in Crisis Room
16:00 *Crisis Room (Thomas Peter)* *Traditional Paper Based (Jesper Lund)*
Discuss and verify information (15') Share information (30')
Identify priority needs and locations (15') Identify priority needs and locations (15')
Produce maps + list of priorities (5') Produce maps + list of priorities (5')
17:00 Hot Wash-Up (30')
Each group presents: the situation + priority needs, challenges and strengths of the method
17:30 Return to Hotel

Restaurant Belvedere, Ranco

20:00 Social Dinner (Pick-up at Hotels)
23:00 Return to Hotel

Tuesday, 13.03.2012

Meeting Room 118, Bldg. 72c

08:30 Repetition of Mobile Device Experiment + Presentation of OSOCC
10:00 Evaluation: Summarization of Technical Assessment Outcomes
11:00 Evaluation: Utility & Interoperability of Mobile Devices for Crisis Management
12:00 Evaluation: ECML Approach of Iterative Demonstration Exercises → Martin
13:00 Lunch Break

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