



# Mobile Interoperability for International Field Deployment

## Introduction

1<sup>st</sup> JRC Benchmarking Workshop  
ACRIMAS Pilot Case

*Tom De Groeve*

# Agenda



*09:00 Welcome and Introduction*

*10:00 Introduction to workshop*

- **Workshop Focus, Goals, Methodology**
- Details of exercise

*10:45 Coffee Break*

*11:00 Presentations of Technology (15' each)*

*12:30 Lunch*

*14:00 Start of exercise*

- **Instructions (15')**
- **Field exercise (1h15')**
- **OSOCC (1h)**

*17:00 Hot wash-up (1h)*

*20:00 Dinner*

## **Day 2**

- 8:00 pick-up
- 9:00 repetition (1h)
- 10:30 evaluation (2h)
- Lunch

# Introduction to the workshop

*Who is here?*

*Previous  
demonstrations*

*What are we doing  
today?*

*Details (Markus)*

- **Field exercise**
- **OSOCC exercise**
- **Evaluation**  
(Tuesday)

# Who is here?



## *Experts on mobile technology*

- **SME**
- **Academics**
- **R&D**

## *Relevant projects*

- **Tools for specific use case**
- **Not only EU**

## *Crisis management professionals*

- **National**
- **International**

## *Observers*

- **ACRIMAS**
- **Industry**
- **R&D**

## **Round table:**

**Name, Country, Organisation, Key expertise**



## *Principle*

- **Improvement through iterative demonstrations**

## *JRC's experience*

- **2008**  
First mobile software
- **2009**  
Adaption to multiple customers (UN, EU)
- **2010**  
Operational use in field missions (JRC, MIC)

## *Multiple technology*

- **2011: Carpathex exercise**  
Alice + FRT + iMission (no interop)
- **2011: Valgeo workshop**  
Alice + FRT + iMission (interop)
- **2011: SAR Torino**  
FRT + iMission + Ushahidi
- **2012: ACRIMAS Pilot Case**  
Alice, FRT, iMission, GINA, EpiCollect, ASIGN/GEOPICTURES



## *September 2011*

- **4 days**
- **800 emergency managers**
- **PO, SK, UK, HU, MIC**
- **36 hours**
  - chemical accidents
  - major flood
  - train accident
  - building collapse
  - bomb alarm

## *New technologies*

- **Dedicated programme**
- **Mobile technology**

### Aim

- Situation awareness,
- Command and Control

### Tools

- Alice
- Eliseo
- (FRT, iGDACS)

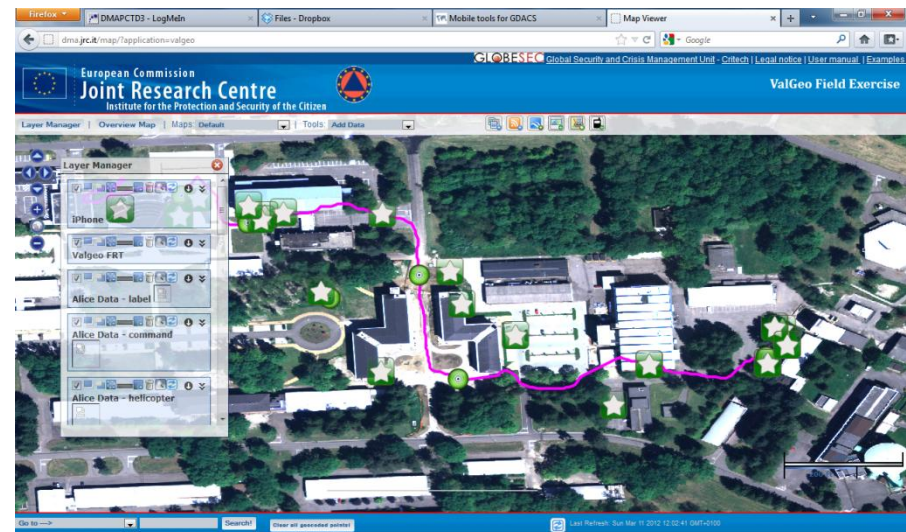
## *Observations*

- **Introduction of technology**  
Training!
- **Communication**  
Bi-directional  
Peer-to-peer
- **Filter info**  
HQ overrule
- **Open standards**



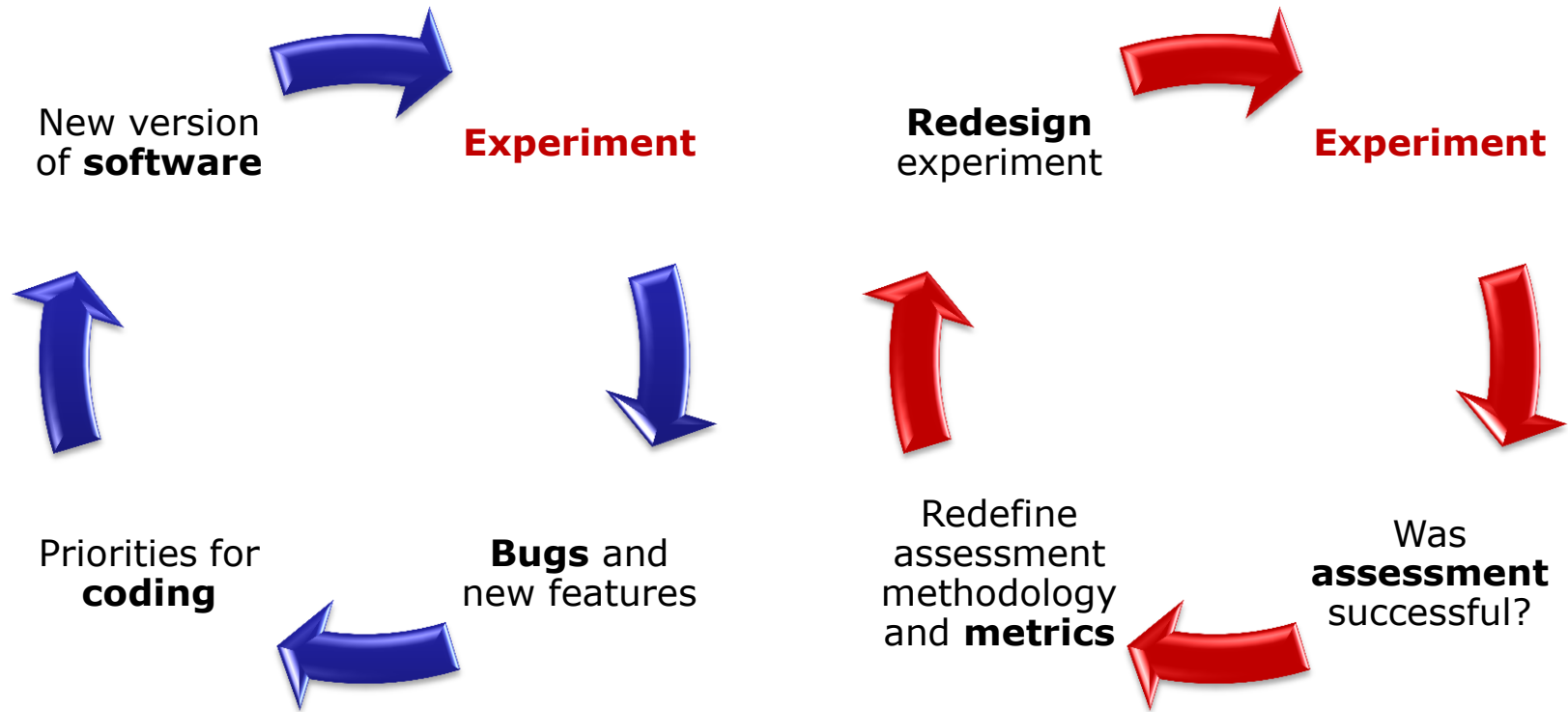
## *Observations*

- **First interop experiment**
- **Metrics needed**
  - Quantify time saving
  - Quantify cost-benefit
- **Technological**
  - GPS accuracy
  - Weight/big screen
  - Record remote targets



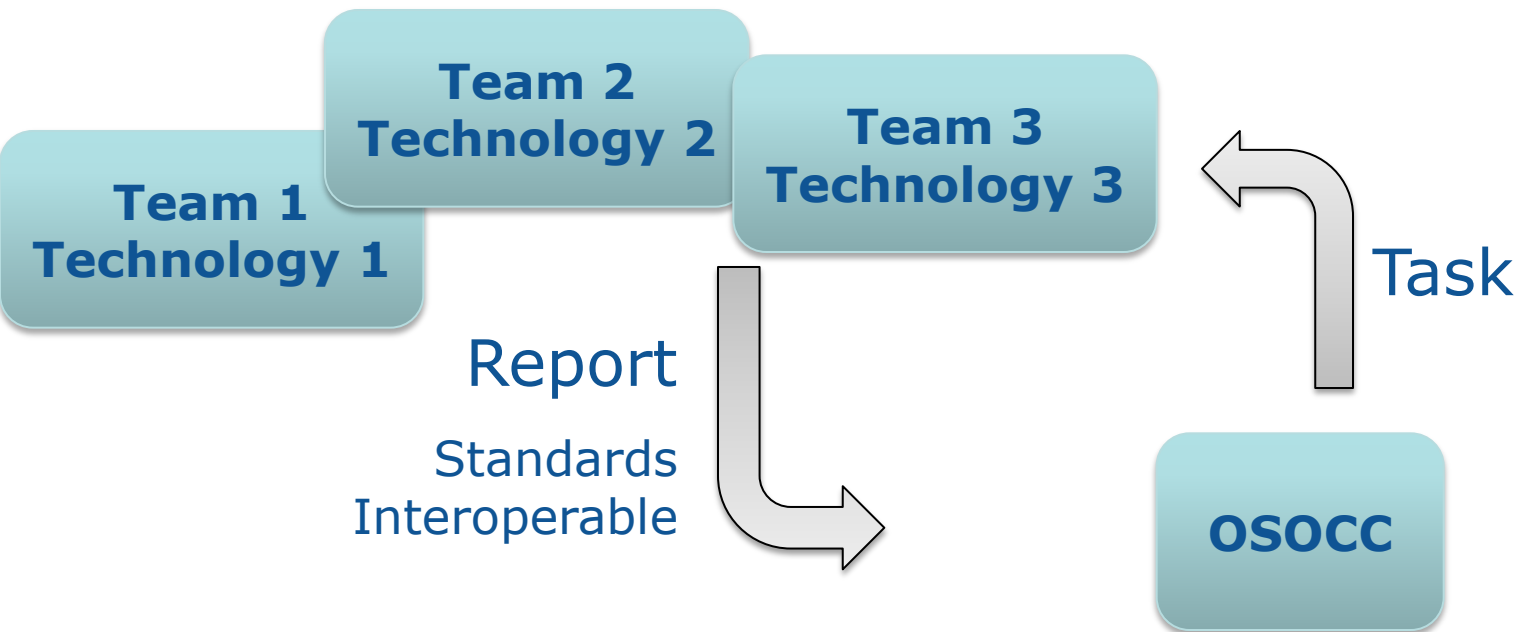


# ACRIMAS Pilot: 3<sup>rd</sup> Iteration



# What are we trying to do?

*Thesis: "Mobile technology can make needs assessment in deep field more efficient"*



# What are we trying to do?



## *Controlled experiment*

- **Tools v. Paper**

- Same team sizes
- Same task
- Same information
- Same outcomes

- **Assessment**

- Metrics (recording)
- Forms
- Evaluation forms
- Discussions

## *Realistic context*

- **Int. OSOCC**

- Scenario by OCHA
- OSOCC lead by OCHA trained staff

- **Multiple actors**

- 6 technologies
- Different experience levels
- Multi-lingual
- Different sectors (fire, SAR, mapping...)

# What are we trying to do?



## *Getting familiar with the technology*

- **Experiment**  
Controlled situation  
(measured)
- **Dinner**  
Mobile tools (discussed)
- **Day 2, repeat**  
Free (used)

## *Evaluation*

- **Experiment**  
Field notes
- **Hot wash up**  
First comments

## *Panel discussions*

- **Technology**  
Technical issues
- **Purpose**  
Is it more efficient?
- **Method**  
Can the experiment be improved?

# Expected outcomes

## *Workshop report*

- **Understanding of technology improvement needs**  
Features for interoperability
- **Recommendations to practitioners on adopting mobile technology**  
Known efficiency gains
- **Metrics for measuring efficiency gains**  
Ideas for improving assessment methods

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# Mobile Interoperability for International Field Deployment

## Experiment (Day 1)

1<sup>st</sup> JRC Benchmarking Workshop  
ACRIMAS Pilot Case

*Markus Rester*

# Experiment Day 1: Field Missions

14:00 Setting up the OSOCCs (*Thomas Peter*) – **Categories**  
Field couples: 2 people (mobile device + paper based)  
3 couples with different devices join team.

14:15 Configuration of Systems – **Categories**  
Training of Users

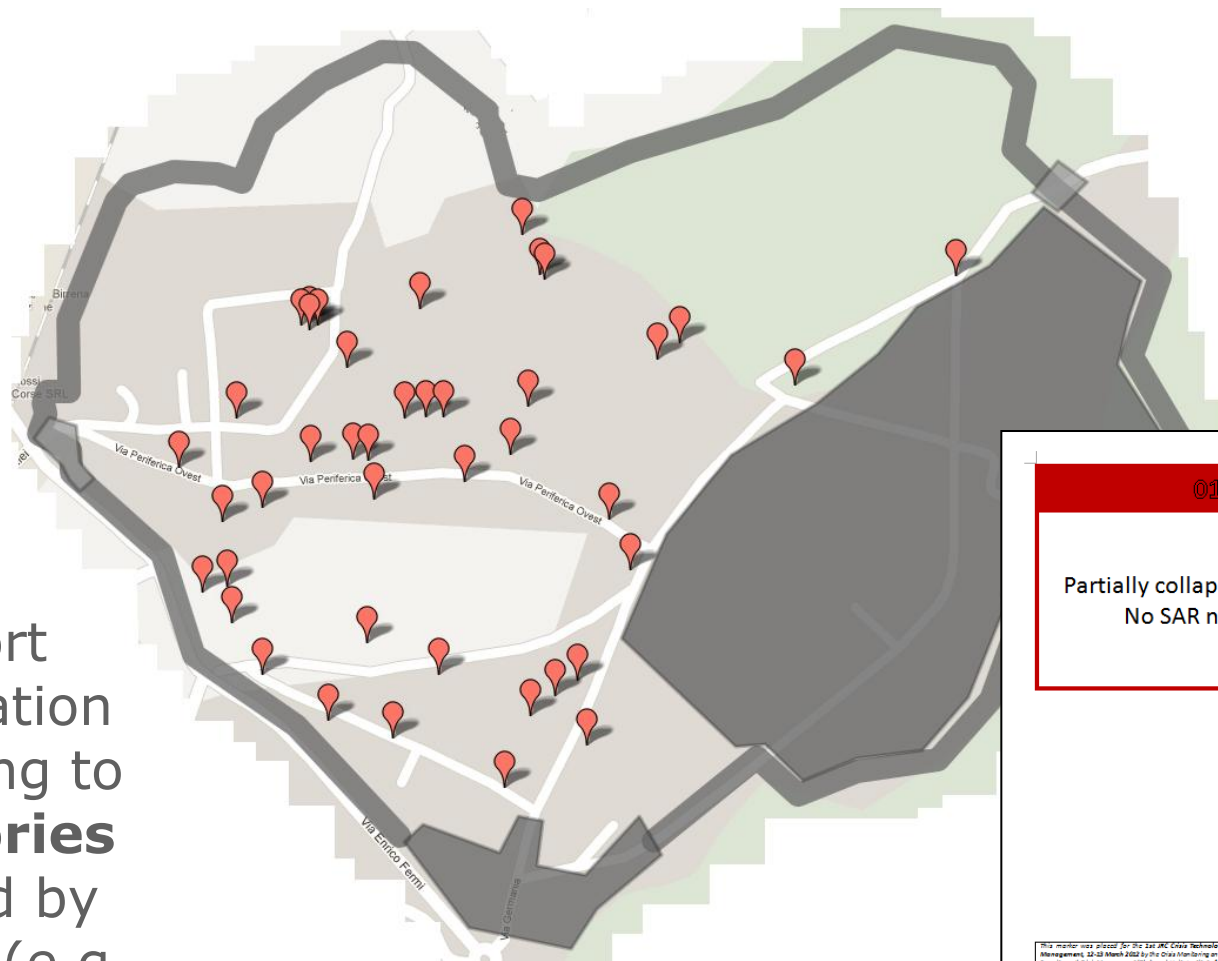
14:30 Deployment of Teams to the Field

15:45 Return to OSOCCs (ECML / Building 68)





# Experiment: Overview Map



Report information according to **categories** defined by OSOCC (e.g. shelter, SAR...)

01

Partially collapsed building.  
No SAR needed.

This report was created for the EU JRC Crisis Technology Workshop on Mobile Resilience for Crisis Management, 22-23 March 2022 by the Crisis Monitoring and Response Technologies (CM-RTC) Action, Global Security and Crisis Management (GSCM) unit, Institute for the Protection and Security of the Citizen (IPSC).  
Please do not remove! For further contact, visit <http://ec.europa.eu/jrc>

# Experiment Day 1: Field Mission Forms



record observations on **system set up and customization** (e.g., time needed, expertise needed)



**mobile device usage “diary”**: relevant meta-information on set actions (e.g., sent reports + timestamp + marker ID), usability problems, troubles in semantic encoding of encountered information, etc.



**paper based information collection**: simple form for recording information, incl. meta-comments. Main purpose: uniform artifacts for the paper based OSOCC

# Experiment Day 1: OSOCC Sessions

- 16:00 Crisis Room OSOCC  
*(Alois Hirschmugl, Andrea Di Lolli, Dunja Dujanovic)*  
Discuss and verify information (15')  
Identify priority needs and locations (15')  
Produce maps + list of priorities (5')
- 16:00 Traditional Paper Based OSOCC  
*(Flemming Nielsen, Thomas Peter)*  
Share information (30')  
Identify priority needs and locations (15')  
Produce maps + list of priorities (5')

# Experiment Day 1: Hot Wash-Up

17:00 Hot Wash-Up (40')

Each group presents (10') – based on PowerPoint template

The situation: map

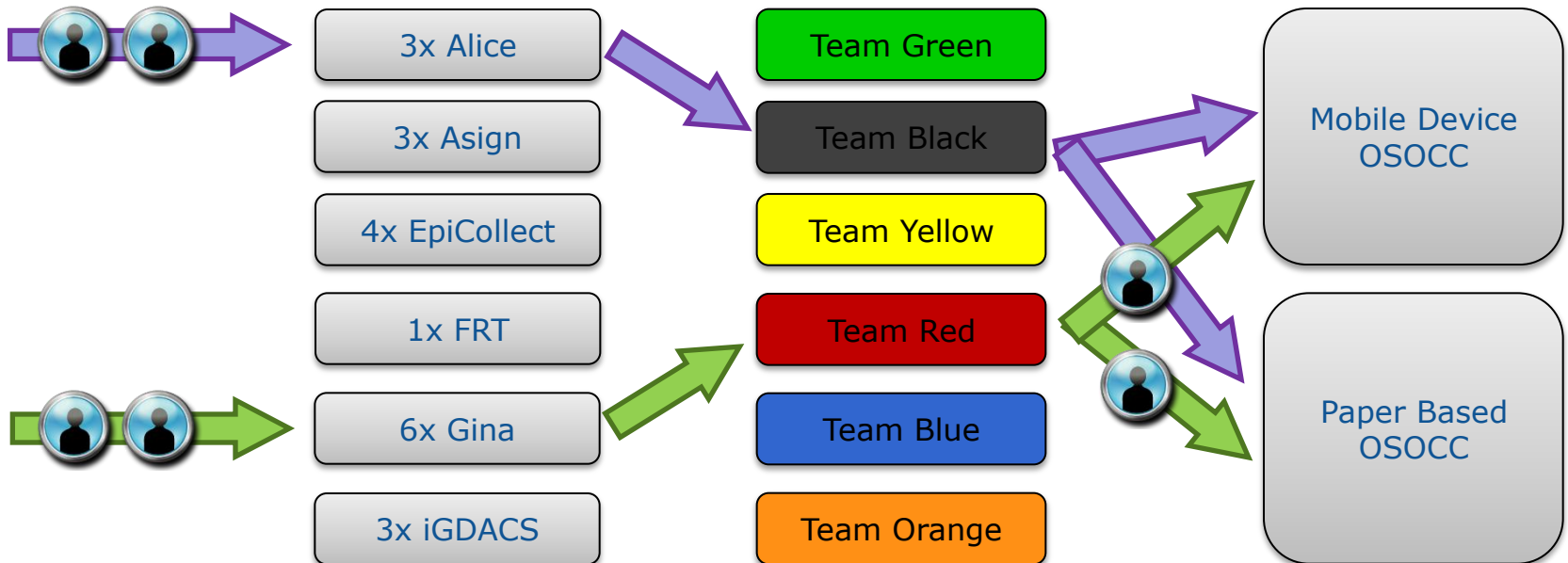
collected information

priority needs

Challenges and strengths of the method

Discussion of Outcomes (20')

# Experiment: Organisation



# Questions?

*Coffee break*



# Mobile Interoperability for International Field Deployment: Evaluation (Day 2)

09:00 Demos of Web Applications

10:00 Walk to Bldg. 36

10:30 – 13:00 Evaluation sessions

14:45 Bus leaves JRC from Crisis Room

# Back-office demos

*Yesterday*

- **Common denominator of applications**

*10' presentations of Web applications*

- **Most important and unique features**
- **Web applications for managing info**



## Evaluation Day 2: Technical Assessment

Q: System setup and system use is easy (learnability, usability)?

Q: System customization (e.g., categories, labels, tags, forms, ...) is possible to meet different needs?

Q: Systems are able to interoperate with each other (compatibility, information granularity, symbology, etc.)?

Q: What enhancements and developments are necessary to improve technical interoperability?

## Evaluation Day 2: Utility & Interoperability

Q: Does the use of multiple mobile devices/systems lead to the creation of more accurate and more timely maps?

Q: Does the use of multiple mobile devices/systems enable more accurate and more timely response plans?

Q: Can a single map showing feeds from different devices be understood by practitioners?

Q: What enhancements and developments are necessary to improve the experienced shortcomings?

# Evaluation Day 2: Acrimas Approach of Iterative Demonstration Exercises

Q1: Did the workshop meet your expectations?

Is it an effective way to learn about the potential and shortcomings of technological solutions?

Can design be changed to be more effective?

Q2: Do you think a benchmarking workshop is cost-effective?

Is what you learnt worth the effort and cost of attending?

Would you attend a follow-up workshop to discover if the tools have improved?

Q3. What other topics are appropriate to benchmark or test in a similar way?

Other formats: table top