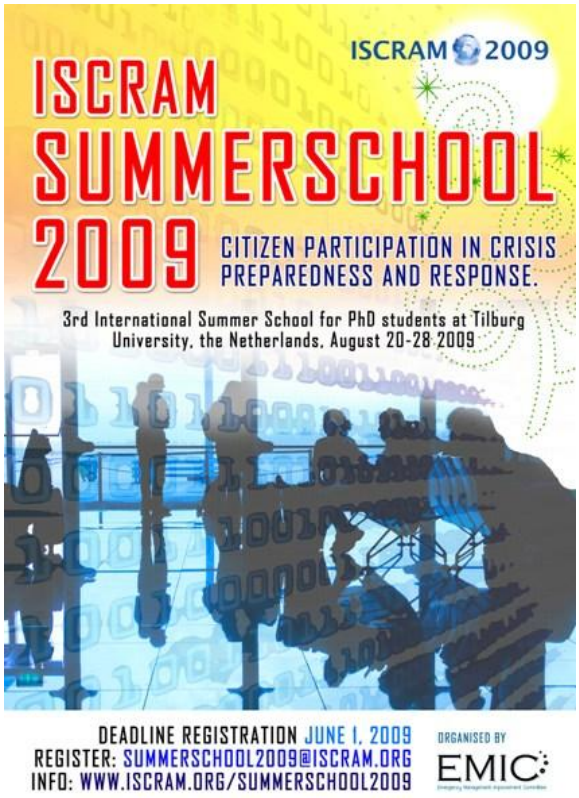
# 2009 ISCRAM SUMMER SCHOOL ON NEW TECHNOLOGIES FOR CRISIS MANAGEMENT




## *CITIZEN PARTICIPATION IN CRISIS PREPAREDNESS AND RESPONSE*

## Program Book

August 20-28, 2009

TILBURG UNIVERSITY

Tilburg, the Netherlands



ISCRAM International Association ivzw
p/a Hermann Debrouxlaan 40
1160 Brussels - Belgium

Emergency Management
Improvement Committee
Tilburg, the Netherlands

**2009 ISCRAM Summer School Organizers**:

**Janneke Liebregts – van Maarle**
**Ron de Milde**
**Willem Muhren**
**Jan Otten**
**Bartel Van de Walle**

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# 2009 ISCRAM SUMMER SCHOOL PROGRAM BOOK

*This version: August 8 2009 – version 1.2*

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## 1. Practical Information: Daily schedule, Venue, Travel

The third ISCRAM Summer School takes place at Tilburg University, from August 20 to 28 2009. The university website is: http://www.tilburguniversity.nl . The contact person at the University is Mrs. Mieke Smulders, Secretary Office of the Department of Information Systems and Management. Mrs. Smulders can be reached at +31 13 466 2188 during regular office hours.

On-site registration takes place on Wednesday, August 19 at Tilburg University, in building K (Koopmans Building, the tallest building on the campus), Office K725 (in Building K, see campus map below), from 3 pm in the afternoon until 6 pm. At 6 pm, a welcome reception is offered by the University in Tilbury III on the campus.

The daily program consists of morning lectures, followed by afternoon working group sessions. All lectures take place on campus in building T (the TIAS Building, see campus map below). All lectures start at 9:00 am, until noon. Lunch can be held in the Student Cafeteria. The afternoon sessions start at 2 pm until the end of the afternoon. Dinner will take place in various locations, during most of which invited "challenge" talks take place.

- Tilburg and the Netherlands

With a population of nearly 200,000 inhabitants, Tilburg is the Netherlands' sixth largest city and is located in the South of the country, close to the Belgian border, in the Province of 'North Brabant'.


For more (tourist) information on the Netherlands and Tilburg, see:

http://www.lonelyplanet.com/worldguide/destinations/europe/netherlands/

http://www.vvvtilburg.nl/algemeen/engels/welcome.html

or see also this nice introduction video at

http://www.tilburguniversity.nl/tilburg/

- From Schiphol Airport to Tilburg (Tilburg Central Train Station):

The easiest way is to take the train. For details on how to get from Schiphol to Tilburg by train, see:

http://www.tilburguniversity.nl/contact/route/air.html

and here:

http://www.tilburguniversity.nl/contact/route/train.html

The Dutch Railways (NS or Nationale Spoorwegen) website is here:

http://www.ns.nl (choose English version).

- Hotel Address:

All participants at the Summer Schools are staying in hotel 'De Postelse Hoeve' which is located in Tilburg.

Hotel Contact Information:

Hotel De Postelse Hoeve
Dr. Deelenlaan 10
5042 AD Tilburg

Phone: +31 13 4636335 (or 013 463 6335 when you are in the country)
Fax: +31 13 4639390

E-mail: info@depostelsehoeve.nl

http://www.depostelsehoeve.nl/

- How to get from Tilburg Central train station (lower right flag on map) to De Postelse Hoeve hotel (upper left flag on the map):


Map generated on http://www.mappy.nl (you can try and generate your own maps there).

- How to get from Hotel De Postelse Hoeve (upper right flag on map) to Tilburg University campus (lower left flag on map):

- Map of Tilburg University Campus with all Buildings indicated:

Campus address: Warandelaan 2, 5000 LE Tilburg, the Netherlands.


- Contact Information Organizers:

During the Summer School, you can always contact Bartel:

**Bartel Van de Walle**:

Cell phone (any time): +32 479 45 7117
Home phone: +32 14 84 20 79
University office: +31 13 466 2016
Email: bartel@uvt.nl or bvdwalle@gmail.com

## 2. Program Overview

All Summer School locations are on the Tilburg University campus. Please note that the program may still be subject to last-minute changes.

### Day 1: Wednesday, August 19 2009

Please join us at Tilburg University, building K, room K729 between 3-6 pm, followed by a welcome reception offered by the University at 6 pm.

**Important Notice**: Bikes (yes, this is Holland!) will be waiting for you at the Hotel upon your arrival on the 19th, so you can use your bike to get to the University for the registration. Someone will be at the Hotel between 2 and 3 pm to help you with the bikes, and hand over your bike. If you are arriving later, you can get the keys for your bike at the hotel reception desk.

| Time | Location | Activity |
|---|---|---|
| | | |
| 3 – 6 pm | K729 (Secretary Office) | On-site Registration |
| 6 – 9 pm | Tilburry III (on Campus) | Welcome Reception offered by the Faculty of Economics and Business Administration |
| | | |

### Day 2: Thursday, August 20 2009

| Time | Location | Activity |
|---|---|---|
| | | |
| 9 am | T-building – room TZ2 | Introduction to the Summer School – student presentations |
| 12 – 1 pm | Student Cafeteria | Lunch |
| 1 – 4 pm | T-building – room TZ2 | **Simon French** on *Stakeholder and Public Participation* |
| 4 pm | Welcome reception by City of Tilburg | Tilburg City Hall |

**Day 3: Friday, August 21 2009**

| Time | Location | Activity |
|---|---|---|
| | | |
| 9 am | T-building – room TZ2 | Lecture by **Patrick Gordon**, UN OCHA on humanitarian IM |
| 12 – 1 pm | Student Cafeteria | Lunch |
| 1 – 5 pm | T-building – room TZ2 | Lecture by **Gisli Olafson**, Microsoft and UNDAC on OneResponse and Microsoft Vine |
| 7 pm | Restaurant | Dinner and Dinner Talk by **Gert De Vries**, from the Dutch National Coordinator for Counterterrorism Office |

**Day 4: Saturday, August 22 2009**

| Time | Location | Activity |
|---|---|---|
| | | |
| 9 am | Hotel Postelse Hoeve | Lecture by **Robert Kirkpatrick** on InSTEDDs new technologies |
| 12 – 1 pm | | Lunch |
| Afternoon | | Free time |
| Evening | Tilburg City Center | Students Evening out… |

**Day 5: Sunday, August 23 2009**

*Social event – fun day off!*

| Time | Location | Activity |
|---|---|---|
| 9 am | Secret (will be announced in the morning) | A boat trip and a visit to a Monastery… and some surprises along the way! |
| | | |
| Evening | | Informal Dinner |

**Day 6: Monday, August 24 2009**

| Time | Location | Activity |
|---|---|---|
| | | |
| 9 am | T-building – room TZ2 | Lecture by **Jonas Landgren** on Human-Centered Design |
| 12 – 1 pm | Student Cafeteria | Lunch |
| 1 – 5 pm | T-building – room TZ2 | Workshop – Lecture by **Ralph Morelli** on the use of free and open mobile technology |
| 7 pm | Restaurant | Dinner and Dinner Talk by **Ben Van Lier**, from Centric IT Solutions |

**Day 7: Tuesday, August 25 2009**

| Time | Location | Activity |
|---|---|---|
| | | |
| 9 am | T-building – room TZ2 | Lecture by **Craig Duncan** on IM for UN ISDR |
| 12 – 1 pm | Student Cafeteria | Lunch |
| 1 – 5 pm | T-building – room TZ2 | Lecture by **Piet Ribbers** on victim tracking and tracing |
| 7 pm | Restaurant | Dinner and Dinner Talk by **Jaap van den Herik**, Tilburg University |

**Day 8: Wednesday, August 26 2009: CityLab Day**

| Time | Location | Activity |
|---|---|---|
| | | |
| 9 am | T-building – room TZ2 | ISCRAM CityLabs |
| 12 – 1 pm | | |
| 1 – 5 pm | | |
| 7 pm | Restaurant | Dinner and Dinner Talk by **Marc Van Ranst**, influenza A H1N1 coordinator Belgium |

**Day 9: Thursday, August 27 2009**

| Time | Location | Activity |
|---|---|---|
| | | |
| 9 am | T-building – room TZ2 | Lecture by **Martijn Neef** on Teaming with Machines |
| 12 – 1 pm | Student Cafeteria | Lunch |
| 1 – 5 pm | T-building – room TZ2 | Lecture by **Tom De Groeve** on technology for crisis situation awareness |
| 6 pm | Restaurant | "Goodbye" Dinner |

**Day 10: Friday, August 28 2009**

| Time | Location | Activity |
|---|---|---|
| | | |
| 9 am | T-building – room TZ2 | Closing Session |
| 12 – 1 pm | Student Cafeteria | Farewell Lunch |
| | | |
| | | |

3. **Participants**

**Adrot, Anouck**
University Paris Dauphine
France

**Bergstrand, Frederik**
Gothenburg University
Sweden

**Durbic, Damir**
Tilburg University
The Netherlands

**Foulquier, Thomas**
Université de Cherbrooke
Canada

**Franke, Jorn**
SAP
France

**Gryszkiewicz, Anna**
Chalmers University of Technology
Sweden

**Imran, Saed**
Cork Univeristy
Ireland

**Lang, Guido**
City University of New York
USA

**Lijnse, Bas**
Radboud University Nijmegen
The Netherlands

**Lu, Xiaoli**
Leiden University
The Netherlands

**Mishra, Jyoti**
Leeds University
UK

**Muhren, Willem**
Tilburg University
The Netherlands

**Sugimoto, Yasushi**
Manchester Business School
UK

**Thang Quang, Chu**
Marie Curie University
Vietnam – France

**Unen, Can Huseyin**
Istanbul Technical University
Turkey

**Weyns, Kim**
Lund University
Sweden

**Witek, Alexandra**
UC Irvine
USA

4. **Lecturers**

**Burghardt, Paul**
DECIS – Delft Cooperation on Intelligent Systems
The Netherlands

**De Groeve, Tom**
Institute for the Protection and Security of the Citizen
Support to External Security
Joint Research Centre of the European Commission

**de Vries, Gert**
National Coordinator for Counterterrorism
The Netherlands

**Duncan, Craig**
Information Management Unit
UN International Strategy for Disaster Reduction
United Nations

**French, Simon**
Manchester Business School
The University of Manchester
UK

**Gijs, Geert**
Proces Manager Operations
Emergency Planning & Disaster Relief
Coordinator B-FAST
Incident and Crisis Management
Federal Public Service Health
Belgium

**Gordon, Patrick**
UN Office for the Coordination of Humanitarian Aid (OCHA)
United Nations

**Jul, Susanne**
Amaryllis Consulting
USA

**Kirkpatrick, Robert**
InSTEDD
USA

**Landgren, Jonas**
IT University and Gothenburg University
Sweden

**Morelli, Ralph**
Trinity College
USA

**Neef, Martijn**
TNO
The Netherlands

**Olafson, Gisli**
Microsoft and UNDAC
Icelaned

**Ribbers, Piet**
Tilburg University
The Netherlands

**van den Herik, Jaap**
Tilburg University
The Netherlands

**van Lier, Ben**
Centric IT Solutions
The Netherlands

**Van Ranst, Marc**
Professor and H1N1 Influenza Coordinator
Belgium

## 5. Lectures - short abstracts

### Simon French: Stakeholder and Public Participation for Planning and Recovery: an introduction and critique

To set the scene for the Summer School, I will

i. Introduce and survey different methods of stakeholder and public participation, describing my experiences over 20 years in using such events to develop emergency planning and recovery actions.

ii. Offer a critique of the methodologies and express some concerns that we are not doing as much as we might to develop good practice in running wider participation processes.

**Readings**

This paper below was written as a survey of methodologies at the start of a research project. It has never been published, except on a project web-site. You are provided with a copy on this course.

1. French, S., Barker, G., Bayley, C., Carter, E., Hart, A., Maule, A.J., Mohr, C., Shepherd, R. and Zhang, N. *Participation and e-Participation: Involving Stakeholders in the Management of Food Chain Risks in the Rural Economy*. Manchester Business School, University of Manchester, Manchester, M15 6PB, 2005.

The following three papers provide a critique of stakeholder and public participation.

2. S French, D Rios Insua and F. Ruggeri (2006) '*e*-Participation and Decision Analysis.' *Decision Analysis* **4**, 1-16.
3. French, S. (2007) Web-enabled strategic GDSS, e-democracy and Arrow's Theorem: a Bayesian perspective. *Decision Support Systems*. **43**, 1476–1484
4. Bayley, C. and French, S. (2008) Designing a participatory process for stakeholder involvement in a societal decision. *Group Decision and Negotiation*. 17,195–210.

A general introduction to Decision Analysis and Support, including Societal Risk contexts, is provided in:

5. S. French, J. Maule and N. Papamichail (2009) *Decision Behaviour, Analysis and Support*. Cambridge University Press.

And if you care to wait a bit until early next year:

6. D. Rios Insua and S.French (eds) *e-Participation. A Group Decision and Negotiation Perspective*. To be published in the Springer series on Group Decision and Negotiation early 2010.

### Brendan McDonald: Humanitarian IM (to be provided)

**Gisli Rafn Olafson: OneResponse and Microsoft Vine**

After providing a short overview of how and why Microsoft got involved in disaster and crisis management the focus will be put on two solutions that Microsoft has developed that link in with the theme of this year. The first one is a solution developed for increasing information sharing between and from responding organizations. This solution is called OneResponse and was developed in conjunction with UN OCHA. The focus is then moved to the second solutions which has recently been announced and is called Microsoft Vine which provides a platform for public safety information sharing between citizens and responding organizations.

**Robert Kirkpatrick: InSTEDD (To be Provided)**

**Jonas Landgren**

My plan for the summer school is to talk about Design and our role as designers of technology use for citizen response and crisis preparedness. The day will start with a 3* 45 min lectures on design, field research and prototyping. This will be based on the Human Centered Design Method from IDEO.com and experiences from my own fieldwork.

The afternoon will include a field study where the students go out in the city of Tilburg. Their task is to make a series of observations and short interviews in order to get material to formulate design ideas for Citizen crisis preparedness. The output from this afternoon will be a set of proposals describing how IT could improve the citizens ability to collaborate with the authorities in case of crises and large scale accidents.

**Ralph Morelli**

It is estimated that there are now more than 4 billion mobile phone subscriptions worldwide. Today relatively inexpensive phones have become an all-in-one technology, combining voice, text, video, audio, geo-location, internet, email, and a host of useful applications. Use of mobile technology is playing an increasing role in citizen media--i.e., the use of mobile phones by private citizens to produce, consume, and distribute news and other information. This was seen most recently during the post election demonstrations in Iran. Crowdsourcing projects, such as Ushahidi, have achieved notable success in enabling citizens to use mobile phones to share news and information during crisis situations.

This talk will focus on the promise of using free and open mobile technology, by private citizens as well as by professionals and volunteer workers, in crisis response scenarios. The talk will be organized into three sections. The first part will provide a general overview, focusing through specific examples on the state-of-the-art of mobile technology for disaster response, including some of the significant technological and social challenges involved. The second part will focus on the importance of free and open technology--i.e., open standards, free and open source software (FOSS)--in designing and distributing mobile platforms for use by citizens and others in crisis response scenarios. The third part will present a case study of Android/POSIT, a prototype search and rescue tool developed on Google's free and open source Android platform for mobile phones.

**Craig Duncan (to be provided)**

**Piet Ribbers (to be provided)**

**Martijn Neef: Teaming with Machines: the role of autonomous systems in collaborative environments**

Our working environments are becoming filled with smart, networked devices, and close interactions between humans and such devices are commonplace. We use sensor networks for remote observations, we interact by means of wireless communication devices, and we benefit greatly from network-accessible information sources. Gradually, we see these networked devices play a more active and cooperative role in operations. We expect this development to continue. Close cooperation between humans and smart devices will occur at various levels of cognition, perhaps to the extent that we effectively create *'augmented teams'*: teams whose capabilities are greatly augmented by the involvement of sensors, networks and artificial actors, and in which technological means practically become part of the team itself. Advances in artificial intelligence fuel such developments, and allow intelligent systems to play a far more pro-active and autonomous role than traditionally. We are already seeing signs of such hybrid, network-enhanced teams in the military domain, where the availability of networks and smart systems are changing the face of the battlefield. Augmented teams will appear in many safety and security domains, because of the incessant need for additional sensing and acting capabilities in such environments.

However, the insertion of autonomous systems and intelligent networks into a team significantly alters interaction dynamics and operational behaviour, and will require a new understanding of teamwork since it affects the way a team observes, communicates, collaborates and comes to decisions. There are obvious, distinct differences between human and artificial actors, and the team design should be able embrace and make good use of them, so that the capabilities of the team as a whole are augmented. We need have a deep understanding of what it means to collaborate with autonomous systems, and where

In this talk, we will discuss the implications of autonomous systems on the design of future crisis management teams, with a specific attention to task delegation, role adjustment, responsibility and adaptive autonomy between human and artificial actors. We will discuss why system autonomy is such an important issue and how it affects function allocation between man and machine. We will go over different approaches to teaming with intelligent systems, and relate it to crucial subjects such as decision making, accountability and control. We will present some of our own work on hybrid teams in safety scenarios, and discuss some of our practical experiences.

**Tom De Groeve: From mash-ups to modelling: technology for crisis situation awareness**

Large catastrophes often trigger international humanitarian response. This is a particular context in which many independent actors, including governmental agencies (e.g. search and rescue teams), non-governmental organizations (NGO's such as Doctors Without Borders), corporations (e.g. Google or Microsoft) and international organizations (including the United Nations Office for Coordination of Humanitarian Affairs) work together to provide first response and subsequent relief and reconstruction assistance. In the absence of

a clear command and control structure, situational awareness needs to be acquired by each actor independently. Needless to say that this community is eager to develop and use technology and systems to acquire and share information, and that collaboration and information sharing is generally considered as mutually benefitting.

In the early onset of disasters, information is sparse. Traditionally, there are three main sources of information: scientific monitoring systems (e.g. seismological or meteorological networks), official information (briefings by the local emergency management agency) and media reports. Information management for each source requires different technological solutions, respectively focused on modelling, web portals for information sharing, and linguistic processing. However, more recently a fourth source of information is becoming available through Web 2.0: information from citizens, sometimes labelled crowd-sourcing. In case of a disaster, local (and remote) citizens can and do provide information (e.g. eyewitness reports) or analysis (e.g. compiling reports in an information feed). However, this fourth source is not widely used yet by emergency managers because the reliability of the information is not well understood and hard to assess in a time-critical environment.

My lecture will address three different topics in this context:

- Mash-ups: combining information from the Web. Based on the experience of the Joint Research Centre, the principles and advantages of mash-ups in crisis response is shown. Technology and data sources are reviewed, and research challenges highlighted. The following example is used: http://dma.jrc.it/map.

- Modelling: information from various sources can be combined using scientific models to derive new knowledge. In particular for sudden onset disasters, real-time characteristics of the event can be combined with knowledge about the location of the event to derive impact on population. Technology, models and data sources are reviewed, and research challenges highlighted. The following example is used: http://www.gdacs.org.

- Volunteered Geographic Information and collaborative mapping. Creating geographic information, whether it is for base maps or to map damage, is time consuming, but not necessarily difficult. Tools are emerging to allow collaborative mapping, such as OpenStreetMap or Google Map Maker. Technology and data sources are reviewed, and research challenges highlighted. The following example is used: http://www.openstreetmap.org.

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