ISCRAM2013 Conference Committee

Jürgen Beyerer (Conference Chair)
Karlsruhe Institute of Technology and director of Fraunhofer IOSB, Karlsruhe, Germany

Thomas Usländer (Conference Co-chair)
Fraunhofer IOSB, Karlsruhe, Germany

Tina Comes (Programme Chair)
Karlsruhe Institute of Technology, Karlsruhe, Germany
University of Agder, Grimstad, Norway

Jutta Gelderman (Programme Co-Chair)
Georg August University Göttingen, Göttingen, Germany

Stephen Fortier (Programme Co-Chair)
George Washington University, Washington DC, USA

Frank Fiedrich (Programme Co-Chair)
Bergische Universität Wuppertal, Wuppertal, Germany

Tim Müller (Programme Co-Chair)
Karlsruhe Institute of Technology, Karlsruhe, Germany

Wolfgang Raskob (Local Organizer)
Karlsruhe Institute of Technology, Karlsruhe, Germany

ISCRAM2013 Supporting Organizations

US Air Force EOARD
(European Office of Aerospace Research & Development)

ISCRAM Association

Karlsruhe Institute of Technology
Fraunhofer Gesellschaft
Dear Sir/Madam,

It was an honour and a great pleasure for Fraunhofer IOSB and the Karlsruhe Institute of Technology (KIT) to support the ISCRAM community in holding the International Conference on Information Systems for Crisis Response and Management in the Technology Region Karlsruhe from 12 to 15 May 2013, and, in particular, in celebrating its 10th anniversary.

We cordially thank all members of the ISCRAM board, the program and scientific committee as well as the organization team including the student volunteers for their immense effort and time spent to make this conference a success.

Innovations in crisis response and management, by its very nature, require an interdisciplinary and holistic approach, crossing and overcoming the boundary between the scientific and the practitioners’ community.

The present proceedings reflect the practical needs against the variety of scientific methods and architectural approaches, also encompassing the chances and challenges offered by the rapid evolution of the Internet towards the integration of Things (Sensor Web), Services and People (social media).

We wish you a pleasant and inspiring lecture and look forward to future joint projects, co-operations and discussions with you on holistic crisis management!

Sincerely,

Jürgen Beyerer and Thomas Usländer, Fraunhofer IOSB

ISCRAM2013 Conference Chair and Co-Chair

Karlsruhe, May 2013
Conference Welcome on behalf of the ISCRAM Board

Dear ISCRAM2013 Participant,

It is my pleasure to welcome you on behalf of the ISCRAM Association Board to this 10th edition of our ISCRAM conference in Baden-Baden.

At the time I am writing this, less than a month to go before the start of the Conference, at last the many pieces of the complex puzzle that a Conference program is are falling into place. The program has been published, registrations have reached the magic number of 200 since a few days now, and final details are being arranged for the social event and the conference dinner. Now is the proverbial ‘silence before the storm’ – that almost unreal time when the organizers take a last deep breath before all of us start arriving in the days before the Conference kicks-off on Sunday with the PhD Colloquium and the famously traditional “Belgian Beer” evening.

Needless to say, this is the end point of a long and intense journey. A journey that officially started at the conference dinner in May last year, in Vancouver, when conference chair Professor Beyerer informed us of the venue of the conference, and provided us with a glimpse of what we could expect. Since that day in May, the conference chairs, the program chair and her co-chairs, the track chairs, the PhD Colloquium chair, the workshop chairs, the ISCRAM Events Committee chair, the ISCRAM Academic Publications and Standards Committee chair and numerous others have worked relentlessly to build the program, step by step, month by month. A lot of work has gone unnoticed by most of you who are now reading this Welcome Address, but more than once their efforts were crucial and – as is often the case in an academic community – at a late evening or weekend day when any sane person would rather be enjoying a pleasant evening or a day out. As the Board of the ISCRAM Association, we are extremely grateful for the efforts by so many to bring to us the program that we are about to experience in Baden-Baden. Without your efforts and your enthusiasm, ISCRAM would simply not be where it is today. Thank you.

And so here we are now, ready to join and experience the 10th edition of the ISCRAM Conference. Little could we have known when the very first ISCRAM Workshop was organized in Brussels in 2004, that 10 years later this conference would have visited so many places around the world, alternating between Europe (Brussels, Delft, Gothenburg, Lisbon) and Northern America (Newark, Washington DC, Seattle, Vancouver), annual conferences in China (Harbin and Beijing), summer schools in the Netherlands (Tilburg), and an upcoming first ISCRAM-X event in Vietnam.

The resulting body of knowledge is equally impressive: many hundreds of papers (I should try to count the exact number!) have been published in the various conference proceedings, all of which are totally open and freely accessible to everyone through our iscram.org website. Our review process is rigorous and at the same time relevant, as our reviewers usually take care in their review task to provide authors with useful feedback. I therefore thank all reviewers, and their numbers are in the hundreds, who have done this work voluntarily and diligently to make this ISCRAM conference meet the highest academic standards.

The initial ISCRAM Community has been transformed into an ISCRAM Association in 2009, with a Board that is partially renewed every year at the General Assembly during the Conference. Also this year, some of you have decided to run as a candidate for the Board. I wish you all good luck with the election and I am confident that those who will be elected will continue to shape ISCRAM and work for an even better ISCRAM future.

In conclusion, I am extremely happy to see that ten years after that very first ISCRAM Workshop in Brussels, this global community is more alive and kicking than ever. On behalf of the entire Board, I thank you all for your amazing support throughout those ten years and I wish you another wonderful ISCRAM Conference. Enjoy your time in Baden-Baden!

Kind regards,

Bartel Van de Walle

ISCRAM President
10th Anniversary of ISCRAM Conferences

At ISCRAM2013, we celebrate the 10th Anniversary of the ISCRAM series of conferences, which started in 2004 in Belgium. ISCRAM stands for "Information Systems for Crisis Response and Management", not limited to any specific type of natural or man-made disaster. When ISCRAM started, it was much influenced by but not limited to nuclear emergencies, and most research was dedicated to the question how IT and in particular decision support systems might help in the management of crises. At that time, there was no organization behind ISCRAM, but a small number of enthusiasts who had a vision and were determined to turn this vision into reality. Some of them are still members of the ISCRAM Board, others have left the ISCRAM family as their professional life turned into other directions.

Looking at the key words that of the Conference Programme in 2005, it may seem as if there has not been much development. One finds "decision support", "complexity and interoperability", "human factors", "training and gaming" and many more, which are in the lists of Tracks for ISCRAM2013. This reflects the continuous effort dedicated to these topics, which are important for crisis response and management. The 2013 Programme also contains many more tracks that emerged over time such as "Social Media", or that are introduced in 2013 for the first time, such as "Humanitarian Relief Logistics", "Visual Analytics for Crisis Management", and "Critical Infrastructures". This clearly demonstrates that our community has been developing and to find answers to new challenges. The development can be also seen in the number of participants. About 100 participants joined ISCRAM2004, but today, we welcome more than 200 participants. The number of papers submitted increased also dramatically resulting in 4 parallel sessions compared to a maximum of two at ISCRAM2005. What has not changed is the overall schedule of the conference with its start on Sunday and ending Wednesday afternoon. However, the Sunday has become more and more challenging with doctoral courses, tutorials and workshops.

In parallel to the conferences, Summer Schools have been set up, and so far five have been completed successfully. Each Summer School focuses on a particular topic providing intense training with hands-on sessions and lectures for some twenty participants over more than a week. Four conferences were also held in China establishing a new branch of ISCRAM activities.

To deal with the growing interest, the ISCRAM Association was formally founded in 2009 as a non-profit organization under Belgian law. It allowed raising member fees and most importantly provided an organizational structure for the many volunteers that have run ISCRAM. The management of the conferences and workshops has become more professional, and the number of committees almost exploded.

One could write much more about ISCRAM and its evolution but I want to refer to the ISCRAM home page (www.iscram.org) and the ISCRAM Newsletters for further reading.

So all is great with ISCRAM now 10 years after its birthday? Definitely ISCRAM is now an established conference with high academic standards and very attractive for research and.... This "and...." is the weak point in the so impressive CV as it stands for "practitioners". From the beginning on, ISCRAM was aiming to attract both researchers and practitioners. Sometimes, this could be achieved but in most cases academia dominated the conference. Several ingenious plans have been developed how to balance the conference and attract more practitioners. The most recent one are the Practitioners’ Track and the Panel "Bridging the gap" at ISCRAM2013. From my very personal point of view, the ISCRAM community has to make a decision quickly if the future is directed towards a "purely" academic conference with some remaining hard-core practitioners or if the "Practitioners’ Track" becomes more prominent with appropriate support in funding and logistics. It is not a decision of the Board, it is a decision of the Community, and I am curious which direction ISCRAM will select. In any time it will be an interesting one.

Wolfgang Raskob (Local Organizer)
A Note on the Reviewing Process

The work presented at this year’s conference spans multiple disciplines, incorporating a range of methodological approaches and domains of application. To account for this diversity, we invited three types of submissions were for ISCRAM2013:

1. **Full Research Papers** that present completed research
2. **Short Papers** in two categories
   - Research-in-Progress Papers that report on work in early stages and open up discussions;
   - Practitioners’ Papers that report on the needs, requirements and state-of-the-art in practice;
3. **Posters** that provide short synopses of ongoing work

Review criteria and maximum length of submission differed depending on the type of submission. All submissions were subject to a double-blind reviewing process, as well as to an editorial review by the Track Chair and the Programme Committee.

For Full Research Papers, the reviewers were asked to apply the highest academic standards and rate papers according to the criteria:

- **Contribution**: the paper makes a significant contribution to literature;
- **Originality**: the material presented is new and advances the research in the field;
- **Validity**: the methods and approaches applied are valid, the conclusions are supported by the analysis;
- **Relevance**: the material is relevant and appropriate to the conference;
- **Clarity**: the paper is well written and easy to follow.

The five criteria above contributed 50% to the overall score. The remaining 50% of the score was given to the reviewer’s holistic judgment on the paper: should it be accepted?

The purpose of Short Papers is to stimulate timely discussion and offer the opportunity for feedback from the conference participants to shape future research, and provide a valuable presentation to the Conference. To acknowledge the different characteristics, we used a less restrictive set of criteria for Short Papers focusing on **Relevance**, **Significance** and **Clarity**.

The Track Chairs played a key role in the review process. They invited reviewers and managed the whole process to ensure that the standards of the ISCRAM Conference series are met. In their meta-reviews, the Track Chairs compared and evaluated the reviews submitted and provided a recommendation to the Programme Committee along with advice to the authors for how to revise their paper. The Program Chair made the final decision varying from acceptance, revision or rejection, in close collaboration with the Track Chairs. To avoid conflicts of interest, the Scientific Committee reviewed papers of Track Chairs separately.

We would like to thank the reviewers, Track Chairs and Scientific Committee members for the effort and dedication to the ISCRAM Conference.

Acceptance rates

The Programme Committee made the following decisions for Papers submitted initially as…

<table>
<thead>
<tr>
<th>Full Research Papers</th>
<th>Short Papers</th>
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<tbody>
<tr>
<td>43 papers accepted</td>
<td>70 papers accepted</td>
</tr>
<tr>
<td>33 papers suggested as Short Papers</td>
<td>23 papers suggested as posters</td>
</tr>
<tr>
<td>6 papers suggested as posters</td>
<td>9 papers rejected</td>
</tr>
<tr>
<td>8 papers rejected directly</td>
<td></td>
</tr>
</tbody>
</table>

Acceptance rate of Full Research Papers: 48 %
Acceptance rate of Short Papers: 69 %
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Acknowledgements

There is a huge number of people who have contributed to the success of ISCRAM2013. The Conference Chairs, the Scientific Committee, the Local Organizers and the representatives of the ISCRAM Board have dedicated a lot of time and effort to this year’s Conference. We want to thank all of them, as well as the Track Chairs and the reviewers for ensuring that the high standards of the ISCRAM Conference series are met, the organizers of the workshops, tutorials, and panels for their creativity and new ideas.

We thank everyone for his or her hard work and dedication to this conference!

Tina Comes, Frank Fiedrich, Stephen Fortier, Jutta Geldermann and Tim Müller
ISCRAM2013 Programme Chair and Co-Chairs
ISCRAM2013 Scientific Committee

**Pedro Antunes**  
Victoria University of Wellington, New Zealand

**Thomas Bernard**  
Fraunhofer Institute of Optronics, System Technologies and Image Exploitation (IOSB), Germany

**Valentin Bertsch**  
Karlsruhe Institute of Technology, Germany

**Art Botterell**  
Carnegie Mellon University, USA

**Monika Büscher**  
Lancaster University, UK

**Laura Caldeira**  
National Laboratory for Civil Engineering (LNEC), Portugal

**Tina Comes**  
Karlsruhe Institute of Technology, Germany  
University of Agder, Norway

**Frank Fiedrich**  
University of Wuppertal, Germany

**Chris Hagar**  
San José State University, USA

**Martin Hammitzsch**  
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**Carleen Maitland**  
Pennsylvania State University, USA

**Suvodeep Mazumdar**  
University of Sheffield, UK

**José Manuel Mendes**  
University of Coimbra, Portugal

**Kees Nieuwenhuis**  
Thales Group, Netherlands

**Mark S. Pfaff**  
Indiana University - Purdue University Indianapolis, USA

**Volkmar Pipek**  
University of Siegen, Germany

**Lili Yang**  
Loughborough University, UK

**Murali Raman**  
Multimedia University, Malaysia

**Leon Rothkrantz**  
Delft University of Technology, The Netherlands

**Theo van Ruijven**  
Delft University of Technology, The Netherlands

**Volkmar Schau**  
University of Jena, Germany

**Willem Treurniet**  
TNO, Netherlands
Elena Tsiporkova  
Sirris, Belgium

Bartel Van de Walle  
Tilburg University, The Netherlands

Joachim Wächter  
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Friedemann Wenzel  
Karlsruhe Institute of Technology, Germany

Gerhard Wickler  
University of Edinburgh, UK

Adam Widera  
University of Muenster, Germany

Marlene Wiggill  
North-West University, South Africa

Christopher Zobel  
Virginia Tech, USA

Julie Dugdale  
University of Grenoble, France

Zeno Franco  
Medical College of Wisconsin, USA

Simon French  
University of Warwick, UK

Tim Grant  
Netherlands Defence Academy, The Netherlands

Keynote Speakers

Ortwin Renn  
Ortwin Renn serves as full professor and Chair of Environmental Sociology and Technology Assessment at Stuttgart University (Germany). He directs the Stuttgart Research Center for Risk and Innovation (ZIRUS) and the non-profit company DIALOGIK, a research institute for the investigation of communication and participation processes in environmental policy making. Renn also serves as Adjunct Professor for “Integrated Risk Analysis” at Stavanger University (Norway) and as Affiliate Professor at Beijing Normal University.

Hirokazu Tatano  
Hirokazu Tatano is an expert in disaster risk management and economic loss assessment. He is a full professor at Disaster Prevention Research Institute (DPRI) and graduate school of Informatics, Kyoto University (Japan). He is currently serving as a vice-president of the international society for integrated disaster risk management (IDRiM Society).

Kimberly Roberson  
Kimberly Roberson has more than 15 years working with the High Commissioner for Refugees (UNHCR) in the management of information to provide timely and efficient assistance to populations of concern within the organization. She has an advanced degree from Clark University in International Development and Geographic Information Systems. She has applied this knowledge in a variety of refugee, humanitarian and development situations with extensive work around the globe.
ISCRAM2013 Tracks Chairs

COORDINATION AND COLLABORATION

Command & Control Studies
Peter Berggren, Björn J.E. Johansson

Crisis Response Coordination
Willem Treurniet, Bartel Van De Walle

Inter-Organizational Exercises and Operations
Dennis Andersson, Magdalena Granåsen

Serious Games for Crisis Management
Theo van Ruijven, Heide Lukosch, Paloma Diaz

CRITICAL INFRASTRUCTURES

Drinking Water Security Management
Thomas Bernard, Olivier Piller

Healthcare Crisis Information Systems
Zeno Franco, Iqbal Ahamed

DECISION SUPPORT

Decision Support Methods and Tools for Holistic Emergency Management
Tina Comes, Valentin Bertsch, Marcus Vogt, Niek Wijngaards

Efficient Planning and Decision Support for Robust Critical Infrastructure Systems
Valentin Bertsch, Tina Comes, Niek Wijngaards, Jutta Geldermann

EMERGENCY MANAGEMENT INFORMATION SYSTEMS

Architecture of Emergency Management Information Systems
Joachim Wächter, Thomas Usländer

Open Standards and Interoperability in Early Warning and Crisis Management Systems
Martin Hammitzsch, Sophia Liu, Elysa Jones, Sara-Jayne Farmer

ELSI: Ethical, Legal and Social Issues of IT Supported Emergency Response
Monika Büscher, Lisa Wood, Rachel Finn, Zeno Franco

Geographic Information Science & Technology for Crisis Response and Management
Brian Tomaszewski, Massimo Messella, Francisco Nobre

Human Experiences in the Design and Evaluation of Services and Systems for Crisis Response and Management
Jens Pottebaum, Ahmed Seffah, Therese Friberg, Karsten Nebe

HUMANITARIAN CHALLENGES

Humanitarian Challenges
Jennifer Chan, Gisli Olafsson, Bartel Van de Walle

INNOVATIONS IN RESEARCH

Innovations in Research Methods
Mark S. Pfaff, Bas Lijnse,

Rapid integrated understanding of disasters: holistic disaster assessments in near-real time
Tina Kunz-Plapp, Friedemann Wenzel, Michael Kunz, Wolfgang Raskob
INTELLIGENT SYSTEMS

Intelligent Systems
Gerhard Wickler, Julie Dugdale, Serge Stinckwich, Felix Wex

Analytical Modelling and Simulation
Christopher W. Zobel, Mauro Falasca, Gary Fetter

PLANNING AND FORESIGHT

Planning, Foresight and/or Risk Analysis
Murray Turoff, Victor A. Banuls

Handling frequent emergencies and large-scale crises using new resources and actors
Sofie Pilemalm, Niklas Hallberg

Planning and Preparing for Emergencies
Thomas Rose, Stephen C. Fortier

SOCIAL MEDIA

Social Media and Collaborative Systems
Starr Roxanne Hiltz, Volkmar Pipke, Linda Plotnick, Kate Starbird

Community Engagement in Crisis Informatics Research
Christine Adler, Zeno Franco, Paul Bledzyeki, Tracey O’Sullivan, Syed Ahmed

Visual Analytics for Crisis Management
Vitaveska Lanfranchi, Suvodeep Mazumdar, Andrea Varga

PRACTITIONERS’ TRACK

Practitioners’ Track
Luc E.T. Rombout, Paul Burghardt

OPEN TRACK

Open Track
Jose J. Gonzales, Ole- Christopher Granmo
Tutorials and Workshops

REVIEWING YOUR OWN PAPER (AND THOSE OF OTHERS)
Chairperson: Tim Grant, founder, Retired but Active Researcher (R-BAR), and Chair of ISCRAM Publications, and Academic Standards Committee.

Almost everyone attending ISCRAM2013 will have submitted a paper, poster or demonstration that has undergone a reviewing process. Whether you are an author, a reviewer, or a track chair, this tutorial is aimed at giving you the knowledge needed to become a better reviewer, both of your own papers and those of others. In 1.5 hours, the tutorial will cover the history, process, products, scientific knowledge on, and known limitations of reviewing, with the help of sample papers, review forms, and reviews. Using the knowledge gained, you should be able to produce better submissions in future to scientific conferences (including ISCRAM), journals and books.

VISUAL ANALYTICS WITH SOCIAL MEDIA FOR CRISIS MANAGEMENT
Tutors:
Dr. Vitaveska Lanfranchi, Suvodeep Mazumdar, Andrea Varga
OAK Group, Department of Computer Science, University of Sheffield, UK
Corresponding Chairperson: Dr. Vitaveska Lanfranchi

A free hands-on tutorial on social media visual analytics for crisis management. The purpose of this tutorial is to look at the main social media platforms and how it is possible to access and manipulate them to visually support analytics tasks. The tutorial is aimed at students, academics and practitioners from the ISCRAM community that want to understand how visual analytics can support crisis management. There is a limit of 20 participants as the tutorial will be hands-on with the tutors actively supporting participants during the tasks. Attendees should bring a laptop computer with them. No prior experience of visual analytics or social media API is needed although familiarity with coding practices will be a plus.

“GDACS MOBILE” – MOBILE APPLICATIONS AND SOCIAL MEDIA IN CRISIS MANAGEMENT
Event Chairpersons:
Prof. Dr.-Ing. Bernd Hellingrath, University of Muenster
Tom de Groeve, PhD, Joint Research Centre of the European Commission
Corresponding Chairpersons:
Adam Widera, University of Muenster
Daniel Link, University of Muenster

In this workshop we will discuss the state of the art and future trends of rapid assessment tools within a hands-on interdisciplinary workshop including a simulation exercise during the ISCRAM conference. It aims at stimulating and intensifying the discussion on current solutions and developments in the area of post-disaster situation awareness by using different mobile technologies (i.e. geo-location tools), data analysis approaches (i.e. standardized assessment procedures) and social media (i.e. tweet analysis).

Panels

ELSI: Ethical, Legal and Social Issues of IT Supported Emergency Response
Monika Büscher, Hayley Watson

Connecting Reality and Research in Humanitarian Response
Moderator: Erik Kastlander

Practitioners' needs - Closing the gap to scientific results
Moderator: Heiko Werner
Panelists: Thorsten Fischer, Peter Kusterer, Jakob Rhyner, Johannes Richert, Gerhard Wickler
Organizers: Tina Weber, Heiko Werner
List of ISCRAM2013 Academic Papers

THEME 01 - COORDINATION AND COLLABORATION

01.01. Command & Control Studies

Full Research Papers

ID: 133
Leading Cats: How to Effectively Command Collectives
Calderon, Ana C.; Hinds, Joanne; Johnson, Peter
University of Bath, UK

ID: 174
Smartphones as an Alerting, Command and Control System for the Preparedness Groups and Civilians: Results of Preliminary Tests with the Finnish Police
Kuula, Jaana (1); Kauppinen, Olli (1); Auvinen, Vili (1); Kettunen, Pauli (1); Viitanen, Santtu (1); Korhonen, Tuomo (2)
1: University of Jyväskylä, Finland; 2: Central Finland Police Department, Finland

ID: 186
Social Media in Command & Control: A proof-of-principle experiment
Grant, Timothy John (1); Jongejan, Peter (2); Geugies, Fred (3)
1: Retired But Active Researchers (R-BAR), The Netherlands; 2: Netherlands Defence Academy, The Netherlands; 3: Ministry of Defence, The Netherlands

Research-in-Progress Papers

ID: 141
Evaluating the real usability of a C2 system – short and controlled vs long and real
Lanfranchi, Vitaveska; Mazumdar, Suvodeep
Department of Computer Science, University of Sheffield, UK

ID: 181
GDACSmobile: Providing More Ground Truth to the Global Disaster Alert and Coordination System
Link, Daniel (1); Hellingrath, Bernd (1); de Groeve, Tom (2)
1: University of Münster, Germany; 2: Joint Research Centre of the European Commission, Italy

ID: 188
Towards an IT Based Platform for Disaster Risks Management in Algeria
Benssam, Ali; Nouali, Nadia; Nouali, Omar
High School of Computer Science, Algiers, Algeria

ID: 212
Towards the Integration of Place-related Information in Disaster Response Processes
Sackman, Stefan; Hofmann, Marlen; Betke, Hans Julius
Martin Luther University Halle-Wittenberg, Germany

ID: 289
Information infrastructure for crisis response coordination: a study of local emergency management in Norwegian municipalities
Meum, Torbjørn Træland (1); Munkvold, Bjørn Erik (2)
1: University of Agder, Norway; 2: University of Agder, Norway

ID: 292
Impact of the distribution and enrichment of information on the coordination of a human-made fast-burning crisis
Bruggemanns, Bert (1); Milis, Koen (2); Van De Walle, Bartel (3)
1: Antwerp Fire Service, Belgium; 2: Campus Vesta; 3: Tilburg University

01.02. Inter-Organizational Exercises and Operations

Full Research Papers

ID: 187
Inter-organizational Collaboration Structures during Emergency Response: A Case Study
Eide, Aslak Wegner; Haugstveit, Ida Maria; Halvorsrud, Ragnhild
SINTEF, Norway

Research-in-Progress Papers

ID: 139
Training exercises for crisis management training in intra-organizational settings
Asproth, Viveca; Borglund, Erik A.M; Öberg, Lena-Maria
Mid Sweden University, Sweden

ID: 140
Training, Testing and Experimentation: A classification of command post exercises
Heumüller, Erich; Richter, Sebastian; Lechner, Ulrike
Universität der Bundeswehr München, Germany

ID: 220
A typology to facilitate multi-agency coordination
Curnin, Steven William; Owen, Christine
University of Tasmania, Australia

ID: 273
Simulating Information Sharing in Crisis Response Coalitions as a Minority Game
Van der Wal, Ariën J. (1); Grant, Tim (2)
1: Netherlands Defence Academy, The Netherlands; 2: RBAR, The Netherlands

01.03. Serious Games for Crisis Management

Full Research Papers

ID: 136
Communication Interface for Virtual Training of Crisis Management
Rudinsky, Jan; Hvannberg, Ebba Thora
University of Iceland, Iceland

Research-in-Progress Papers

ID: 154
Towards a knowledge-intensive serious game for training emergency medical services
El mawas, Nour; Cahier, Jean-Pierre
ICD/Tech-CICO Lab, University of Technology of Troyes (UTT) France

ID: 227
Virtual Reality Training Environment for Tactical Emergency Operations

Ardila, Laura; Perez-Llopis, Israel; Palau, Carlos E.; Esteve, Manuel
Universitat Politecnica de Valencia, Spain

ID: 276

Disaster in my backyard: a serious game introduction to disaster information management
Meesters, Kenny; Van de Walle, Bartel
Tilburg University, The Netherlands

ID: 286

Exploring Shared Situational Awareness using Serious Gaming for Supply Chain Disruptions
Kurapati, Shalini (1); Kolfschoten, Gwendolyn (1); Verbraeck, Alexander (1); Corsi, Thomas (2); Brazier, Frances (1)
1: TU Delft, The Netherlands; 2: University of Maryland, USA

THEME 02 - CRITICAL INFRASTRUCTURES

02.01 Drinking Water Security Management

Full Research Papers
ID: 162

A SaaS-Based Early Warning Information Fusion System for Critical Infrastructure Safety
Foping, Franclin; Dokas, Ioannis
Cork Constraint Computation Centre, Ireland

Research-in-Progress Papers
ID: 219

Monitoring data identification for a water distribution system based on data self-recognition approach
Che, Han; Liu, Shuming
School of Environment, 403, Tsinghua, China

ID: 293

SMaRT-OnlineWDN: Online Security Management and Reliability Toolkit for Water Distribution Networks
Bernard, Thomas (1); Deuerlein, Jochen (2); Korth, Andreas (3); Sedehizade, Fereshte (4); Pillier, Olivier (5); Gilbert, Denis (5); Maurel, Marie (6); Sandraz, Anne-Claire (7); Werey, Caty (8); Weber, Jean-Marc (9)
1: Fraunhofer IOSB, Germany; 2: 3S Consult, Germany; 3: TZW, Dresden; 4: BWB, Berlin; 5: IRSTEA, France; 6: Veolia Environment, France; 7: Veolia Eau d’Ile de France, France; 8: ENGIE, France; 9: Service de l'eau de la Communauté Urbaine de Strasbourg, France

02.02 Healthcare Crisis Information Systems

Full Research Papers
ID: 185

Top Health Trends: An information visualization tool for awareness of local health trends
Moon, Sung Pil (1); Liu, Yikun (1); Entezari, Steven O. (1); Pirzadeh, Afarin (1); Pappas, Andrew (2); Pfaff, Mark S. (1)
1: Indiana University - Indianapolis, Indiana, USA; 2: MESH Coalition - Indianapolis, Indiana, USA

ID: 208

A mHealth System for Patient Handover in Emergency Medical Services
Schooley, Benjamin
University of South Carolina, USA
THEME 03 – DECISION SUPPORT

03.01 Decision Support Methods and Tools for Holistic Emergency Management

Full Research Papers

ID: 132

**Sympathetic Decisions: Incorporating Impacts on Others into Emergency Response Decision Spaces**

Drury, Jill L. (1); Klein, Gary L. (1); Mathieu, Jennifer (1); Liu, Yikun (2); Pfaff, Mark S. (2)
1: The MITRE Corporation, USA; 2: Indiana University - Indianapolis, USA

ID: 153

**Understanding Humanitarian Supply Chains – Developing an Integrated Process Analysis Toolkit**

Widera, Adam; Dietrich, Hanns-Alexander; Hellingrath, Bernd; Becker, Jörg
University of Münster, Germany

ID: 160

**Supporting multi-level situation awareness in crisis management**

Stiso, Michael E; Eide, Aslak W; Halvorsrud, Ragnhild; Nilsson, Erik G; Skjetne, Jan H
SINTEF ICT, Norway

ID: 173

**Building robust supply networks for effective and efficient disaster response**

Comes, Tina; Schätter, Frank; Schultmann, Frank
Karlsruhe Institute of Technology (KIT), Germany

ID: 178

**Emergent Social Coverage Maps in Urban Electronic Warfare**

Jändel, Magnus; Lindquist, Sinna; Luotsinen, Linus
Swedish Defence Research Agency, Sweden

ID: 193

**An Integrated Multi-Criteria Approach on Vulnerability Analysis in the Context of Load Reduction**

Münzberg, Thomas; Müller, Tim; Mührle, Stella; Comes, Tina; Schultmann, Frank
Karlsruhe Institute of Technology (KIT), Germany

Research-in-Progress Papers

ID: 112

**Crisis clever, a system of handling experience of crisis management for providing help to decision maker**

Sediri, Mohamed (1); Matta, Nada (1); Loriette, Sophie (1); Hugerot, Alain (2)
1: Université de Technologie de Troyes; 2: Aube Emergency department

ID: 127

**A CBRN Detection Framework Using Fuzzy Logic**

Nagy, Ahmed (1); Mkrtchyan, Lusine (2); Van der Meer, Klaas (2)
1: Carnegie Melon University, USA; 2: Belgian Nuclear Research Center, Belgium

ID: 130

**Understanding How Emergency Managers Evaluate Crowdsourced Data: A Trust Game-Based Approach**

Tapia, Andrea; Moore, Kathleen; Griffin, Christoper
Penn State University, USA

ID: 230

**Decision support for the location planning in disaster areas using multi-criteria methods**

Degener, Philip; Gösling, Henning; Geldermann, Jutta
Modeling of countermeasures for large-scale disasters using High-level Petri Nets
Moehrle, Stella
Karlsruher Institut für Technologie (KIT), Germany

A Decision Support System for effective use of probability forecasts
De Kleermaeker, Simone (1,2); Verkade, Jan (1,3,4)

The early phase of a radiation accident: revisiting thinking on evacuation and exclusion zones
French, Simon (1); Argyris, Nikolaos (1); Nuttall, William (2); Moriarty, John (3); Thomas, Philip (4)
1: University of Warwick, UK; 2: Open University, UK; 3: University of Manchester, UK; 4: City University, UK

03.02 Efficient Planning and Decision Support for Robust Critical Infrastructure Systems

Research-in-Progress Papers

A collaborative approach to support decision-making in disaster management based on Volunteer Geographic Information (VGI) and Spatial Decision Support Systems (SDSS)
Horita, Flávio; Albuquerque, João Porto
University of São Paulo, Brazil

Designing dynamic stress tests for improved critical infrastructure resilience
Comes, Tina (1); Bertsch, Valentin (2); French, Simon (3)
1: University of Agder, Norway; 2: Karlsruhe Institute of Technology, Germany; 3: University of Warwick, UK

Decision Support for Critical Infrastructure Disruptions: An Integrated Approach to Secure Food Supply
Münzberg, Thomas (1); Berbner, Ulrich (2); Comes, Tina (1); Friedrich, Hanno (2); Groß, Wendelin (3); Pfohl, Hans-Christian (2); Schultmann, Frank (1)
1: Karlsruhe Institute of Technology, Germany; 2: Technische Universität Darmstadt, Germany; 3: 4flow AG, Germany

A Decision-making Validation Model for Urban Traffic Evacuation
Yuan, Shengcheng; Ma, Yefeng; Zhang, Hui; Liu, Yi
Institute of Public Safety Research, Tsinghua University, China

THEME 04 - EMERGENCY MANAGEMENT INFORMATION SYSTEMS

04.01 Architecture of Emergency Management Information Systems

Full Research Papers

The Seven Main Challenges of an Early Warning System Architecture
Moßgraber, Jürgen (1); Chaves, Fernando (1); Middleton, Stuart E. (2); Zlatev, Zlatko (2); Tao, Ran (3)
1: Fraunhofer IOSB, Germany; 2: University of Southampton IT Innovation Centre, UK; 3: Queen Mary University of London, UK
Research-in-Progress Papers

ID: 184
Framework Design for Operational Scenario-based Emergency Response System
Ma, Yefeng; Yuan, Shengcheng; Zhang, Hui; Liu, Yi
Institute of Public Safety Research, Tsinghua University, China

ID: 204
A Novel Architecture for Disaster Response Workflow Management Systems
Hofmann, Marlen; Betke, Hans; Sackmann, Stefan
Martin-Luther-Universität Halle Wittenberg, Germany

ID: 248
Towards a flexible network of sensors
Barthe-Delanoë, Anne-Marie; Bénaben, Frédérick (1); Truptil, Sébastien (1); Pingaud, Hervé (2)
1: Ecole des Mines d’Albi-Carmaux, France; 2: Université Jean-François Champollion, France

04.02 Open Standards and Interoperability in Early Warning and Crisis Management Systems

Full Research Papers

ID: 170
Ontologies for Crisis Management: A Review of State of the Art in Ontology Design and Usability
Liu, Shuangyan (1); Brewster, Christopher (1); Shaw, Duncan (2)
1: Aston University, UK; 2: University of Warwick, UK

Research-in-Progress Papers

ID: 198
Subdivision Codes
Law, Reed Gwillim (1); Hammitzsch, Martin (2)
1: Statoids, USA; 2: GFZ German Research Centre for Geosciences, Germany

ID: 210
Harmonization of Data Formats for Tsunami Simulation Products
Lendholt, Matthias; Hammitzsch, Martin; Löwe, Peter
GFZ German Research Centre for Geosciences, Germany

ID: 238
Solving Interoperability Issues in Cross Border Emergency Operations
Schütte, Frederik (1); Casado, Rubén (2); Rubiera, Emilio (3)
1: antwortING Ingenieurbüro PartG, Germany; 2: Treelogic, Spain; 3: Fundación CTIC, Spain

ID: 271
Sensor Web and Web Processing Standards for Crisis Management
Jirka, Simon; Nüst, Daniel; Benjamin, Pröß
52°North Initiative for Geospatial Open Source Software GmbH, Germany

ID: 284
Location Information Interoperability of CAP and PIDF-LO for Early Warning Systems
Wolf, Karl
Vienna University of Technology, Austria

ID: 307
Evaluating the Integrability of the Quake-Catcher Network
Chung, Angela I.; Lawrence, Jesse F.; Christensen, Carl
04.03ELSI: Ethical, Legal and Social Issues of IT Supported Emergency Response

Full Research Papers

ID: 167
Accelerating emergency response through IT? Technological effects on the management of mass casualty incidents in Germany
Ellebrecht, Nils; Feldmeier, Konrad; Kaufmann, Stefan
University of Freiburg, Germany

ID: 196
Privacy, Security, Liberty: Informing the Design of EMIS
Buscher, Monika; Wood, Lisa; Perng, Sung-Yueh
Lancaster University, UK

Research-in-Progress Papers

ID: 116
Do-it-yourself justice: considerations of social media use in a crisis situation: the case of the 2011 Vancouver riots
Rizza, Caroline (1); Guimarães Pereira, Ângela (2); Chiaramello, Michel (3); Curvelo, Paula (4)
1: European Commission - Joint Research Centre, Italy, TELECOM ParisTech, France; 2: European Commission - Joint Research Centre, Italy; 3: European Commission - Joint Research Centre, Italy; 4: European Commission - Joint Research Centre, Italy

ID: 241
Privacy and ethical implications of the use of social media during a volcanic eruption: some initial thoughts.
Watson, Hayley (1); Finn, Rachel (2)
1: Trilateral Research and Consulting, UK; 2: Trilateral Research and Consulting, UK

ID: 251
Ethical Challenges of participatory sensing for crisis information management
Tarquini, Massimiliano; Morgano, Maurizio
S3Log, Italy

ID: 269
A new Manhattan Project? Ethics and Interoperability in Emergency Response Systems of Systems
Büscher, Monika (1); Bylund, Markus (2); Sanches, Pedro (2); Ramirez, Leonardo (3); Wood, Lisa (1)
1: Lancaster University, UK; 2: Swedish Institute of Computer Science / Royal Institute of Technology; 3: Fraunhofer FIT, Germany

04.04 Geographic Information Science & Technology for Crisis Response and Management

Full Research Papers

ID: 118
Locating Emergency Responders using Mobile Wireless Sensor Networks
Benkhelifa, Imane (1,2); Moussaoui, Samira (2); Nouali, Nadia (1)
1: CERIST Research Center, Algeria; 2: USTHB University, Algeria

ID: 137
Supporting situation awareness on the move - the role of technology for spatial orientation in the field
Johansson, Björn Johan Erik; Hellgren, Charlotte; Oskarsson, Per-Anders; Svensson, Jonathan
FOI, Sweden
Research-in-Progress Papers

ID: 157
**Search and Surveillance in Emergency situations – A GIS based approach to construct near-optimal visibility graphs**
Morin, Michael (1); Abi-Zeid, Irène (1); Nguyen, Thanh Tung (1); Lamontagne, Luc (1); Maupin, Patrick (2)
1: Université Laval, Canada; 2: DRDC-Valcartier

ID: 165
**Using Wireless Sensor Networks in the Sensor Web for Flood Monitoring in Brazil: Lessons Learned**
Degrossi, Lívia Castro; Amaral, Guilherme Gentil do; Vasconcelos, Eduardo Santos Medeiros de; Albuquerque, João Porto de; Ueyama, Jó
University of São Paulo, Brazil

ID: 205
**Geospatial Site Suitability Modeling for US Department of Defense Humanitarian Assistance Projects**
Clark, Timothy (1); Curran, Richard (2)
1: US Army Geospatial Center, USA; 2: US Army Engineer Research and Development Center

04.05 Human Experiences in the Design and Evaluation of Services and Systems for Crisis Response and Management

Full Research Papers

ID: 106
**The Effect of Age on Technology Acceptance among Field Police Officers**
Kurkinen, Erkki L
University of Jyväskylä, Finland

ID: 128
**Design of a Process Model for Unmanned Aerial Systems (UAS) in Emergencies**
Thamm, Hans-Peter (1); Ludwig, Thomas (2); Reuter, Christian (2)
1: BT Geoconsulting and Mapping, Germany; 2: University of Siegen, Germany

ID: 155
**An Interaction Approach to Enhance Situational Awareness and the Production of Anticipatory Actions in Emergency Operation Centers**
Arias-Hernandez, Richard (1); Fisher, Brian (2)
1: Simon Fraser University, Canada; 2: Simon Fraser University, Canada

Research-in-Progress Papers

ID: 147
**Scenarios + Touchpoints = a Tool for Analyzing Crisis Situations and Designing Management and Rescue Services**
Touloum, Karim (1); Idoughi, Djilali (1); Seffah, Ahmed (2); Sabroux, Camille-Rosenthal (2)
1: Applied Mathematics Laboratory - University A. Mira of Bejaia, Algeria; 2: Laboratoire d'Analyse et Modélisation de Systèmes pour l'Aide à la DÉcision - Université Paris-Dauphine

ID: 214
**Applying ISO 9241-110 Dialogue Principles to Tablet Applications in Emergency Medical Services**
Mentler, Tilo; Herczeg, Michael
University of Luebeck, Germany

ID: 258
**Design of an Enhanced Interface for Composition of Alert Messages: Methodology and Results**
Mulero Chaves, Javier; Parraga Niebla, Cristina
Using SYnRGY to Support Design and Validation Studies of Emergency Management Solutions
Gagnon, Jean-François (1); Couderc, François (2); Rivest, Martin (2); Banbury, Simon (3); Tremblay, Sébastien (1)
1: Co-DOT laboratory, Université Laval, Canada; 2: Thales Research and Technology Canada; 3: C3 Human Factors Consulting

THEME 05 - HUMANITARIAN CHALLENGES

05.01 Humanitarian Challenges

Full Research Papers

ID: 134
Meeting the Sphere Standards: a case analysis of earthquake response in China
Bo, Tao (1,2,3); Van de Walle, Bartel (2)
1: Earthquake Administration of Beijing Municipality, China; 2: Tilburg University, The Netherlands; 3: Institute of Engineering Mechanics, China Earthquake Administration, China

ID: 142
Context Ontology for Humanitarian Assistance in Crisis Response
Jihan, Satria Hutomo; Segev, Aviv
KAIST - Korea Advanced Institute of Science and Technology, Republic of Korea (South Korea)

Research-in-Progress Papers

ID: 283
Community-based Comprehensive Recovery: Closing collaboration gaps in urban disaster recovery
Neef, Martijn; van Dongen, Kees; Rijken, Marijn
TNO, The Netherlands

THEME 06 - INNOVATIONS IN RESEARCH

06.01 Innovations in Research Methods

Research-in-Progress Papers

ID: 117
ASC Model: a process model for the evaluation of simulated field exercise in the emergency domain.
Duarte, Alayne da Costa (1); Borges, Marcos Roberto da Silva (1); Gomes, Jose Orlando (1); de Carvalho, Paulo Victor Rodrigues (2)
1: UFRJ, Brazil; 2: IEN, Brazil

ID: 145
Comparing performance and situation awareness in USAR unit tasks in a virtual and real environment
Horsch, Corine (1); Smets, Nanja (1,2); Neerincx, Mark (1,2); Cuijpers, Raymond (3)

ID: 166
Measuring Collaborative Sensemaking
Duffy, Tom; Baber, Chris
University of Birmingham, UK

ID: 274
Understanding crises: investigating organizational safety culture by combining agent modeling and organizational ethnography.
Passenier, David Falco; Mols, Colin Vincent; Bim, Jan; Sharpanskykh, Alexei
VU University Amsterdam, The Netherlands

06.02 Rapid integrated understanding of disasters: holisitic disaster assessments in near-real time

Full Research Papers

ID: 206
Real-time Decision Making in Urgent Events: Modeling Options for Action
Comfort, Louise K. (1); Wukich, Clayton (1); Colella, Brian (1); Voortman, Mark (1); Connelly, Scott (1); Drury, Jill (2); Klein, Gary L. (2)
1: University of Pittsburgh, USA; 2: The MITRE Corporation, USA

Research-in-Progress Papers

ID: 119
Near Real-Time Forensic Disaster Analysis
Wenzel, Friedemann (1); Zschau, Jochen (2); Kunz, Michael (1); Daniell, James (1); Khazai, Bijan (1); Tina, Kunz-Plapp (1)
1: Karlsruhe Institute of Technology (KIT), Germany; 2: GeoForschungsZentrum Potsdam, Germany

ID: 280
Adding Secondary Hazard and Ground-truth Observations to PAGER's Loss Modeling
Wald, David Jay
U.S. Geological Survey, USA

ID: 211
Rapid Aerial Mapping with Multiple Heterogeneous Unmanned Vehicles
Santamaria, Eduard; Segor, Florian; Tchouchenkov, Igor
Fraunhofer IOSB, Germany

THEME 07 - INTELLIGENT SYSTEMS

07.01 Intelligent Systems

Full Research Papers

ID: 143
Context-Based Knowledge Fusion Patterns in Decision Support System for Emergency Response
Smirnov, Alexander; Levashova, Tatiana; Shilov, Nikolay
St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences, Russian Federation

ID: 168
Validating Procedural Knowledge in the Open Virtual Collaboration Environment
Wickler, Gerhard
University of Edinburgh, UK

ID: 172
Crisis Management Using Multiple Camera Surveillance Systems
Rothkrantz, Leon
TU Delft, The Netherlands

Research-in-Progress Papers

ID: 144

Revealing unexpected effects of rescue robots’ team-membership in a virtual environment

Horsch, Corine (1); Smets, Nanja (1,2); Neerincx, Mark (1,2); Cuijpers, Raymond (3)

ID: 229

KIS – A Crisis Team Information System

Pahl, Svend-Anjes; Thiel-Clemen, Thomas
Hamburg University of Applied Sciences, Germany

07.02 Analytical Modelling and Simulation

Full Research Papers

ID: 151

Autonomous Accident Monitoring Using Cellular Network Data

Görnerup, Olof; Kreuger, Per; Gillblad, Daniel
Swedish Institute of Computer Science (SICS), Sweden

ID: 158

Decision making in humanitarian logistics – A multi-objective optimization model for relocating relief goods during disaster recovery operations

Rottkemper, Beate; Fischer, Kathrin
Hamburg University of Technology, Germany

Research-in-Progress Papers

ID: 163

A System Dynamics Model of the 2005 Hatlestad Slide Emergency Management

Gonzalez, Jose J.; Bøe, Geir; Johansen, John Einar
University of Agder, Norway

ID: 169

ICT Support and the Effectiveness of Decision Making in Disasters: A Preliminary System Dynamics Model

Hiltz, Starr Roxanne (1); Jose J. Cabeza, Gonzalez (2); Murray, Turoff (1)
1: NJIT, USA; 2: U. of Adger, Norway

ID: 216

Optimization Modeling and Decision Support for Wireless Infrastructure Deployment in Disaster Planning and Management

Bartolacci, Michael R. (1); Mikovska, Albena (2); Ozceylan, Dilek (3)
1: Penn State University - Berks, USA; 2: Aalborg University, Denmark; 3: Sakarya University, Turkey

ID: 218

Study on Source Inversion Technology for Nuclear Accidents Based on Gaussian Puff Model and EnKF

Zhang, Xiaole; Chen, Jianguo; Su, Guofeng; Yuan, Hongyong
Tsinghua University, China

ID: 268

Analytically comparing disaster recovery following the 2012 derecho

Zobel, Christopher William
Virginia Tech, USA
ID: 290
Scheduling Response Operations under Transport Network Disruptions
Wilson, Duncan T; Hawe, Glenn I; Coates, Graham; Crouch, Roger S
Durham University, UK

ID: 294
A systemic process model for humanitarian supply chain management
Santos Lima, Fabiana (1); Hellingrath, Bernd (2); Widera, Adam (2); Buss Goncalves, Mirian (1)
1: Universidade Federal de Santa Catarina, Brazil; 2: University of Muenster, Germany

THEME 08 - PLANNING AND FORESIGHT

08.01 Planning, Foresight and Risk Analysis

Full Research Papers

ID: 105
Case Study on Risk Analysis for Critical Systems with Reliability Block Diagrams
Weyns, Kim; Höst, Martin
Lund University, Sweden

ID: 126
A Cross Impact Scenario Model of Organizational Behavior in Emergencies
Turoff, Murray (1); Bañuls, Victor (2); Plotnick, Linda (3); Hiltz, Roxanne (1)
1: New Jersey Institute of Technology, USA.; 2: UPO, Spain; 3: Jacksonville State, USA

ID: 191
Supporting Course of Actions Development in Emergency Preparedness through Cross-Impact Analysis
Lage, Bruno Barboza (1); Bañuls, Victor A. (2); Borges, Marcos R. S. (1)
1: Federal University of Rio de Janeiro, Brazil; 2: Pablo de Olavide University, Spain

Research-in-Progress Papers

ID: 123
Disaster Management: Identifying Problem Domains in Communication
Laakso, Kimmo
Ahma insinöörit Oy / University of Turku, Finland

ID: 225
Natural Disaster’s Impact Dynamic Framework
Laugé, Ana; Hernantes, Josune; Sarriegi, Jose M.
Tecnun - University of Navarra, Spain

08.02 Handling frequent emergencies and large-scale crises using new resources and actors

Research-in-Progress Papers

ID: 250
Evaluation of enhanced collaboration between fire and rescue services and security officers
Weinholt, Åsa; Andersson Granberg, Tobias
Linköping university, Sweden

ID: 266
A Framework for “New Actors” in Emergency Response Systems
Yousefi Mojir, Kayvan; Pilemalm, Sofie
Linköping University, Sweden
08.03 Planning and Preparing for Emergencies

Full Research Papers

ID: 164
Optimal Spatial Partitioning for Resource Allocation in Emergency Management
Kolomvatsos, Kostas; Panagidi, Kyriaki; Hadjiefthymiades, Stathes
University of Athens, Greece

Research-in-Progress Papers

ID: 175
Applying software engineering testing techniques to evaluate emergency plans
Diirr, Bruna; Borges, Marcos
Universidade Federal do Rio de Janeiro (UFRJ), Brazil

ID: 304
Emerging Trends Toward Holistic Disaster Preparedness
Mays, Robin; Walton, Rebecca
University of Washington, USA

THEME 09 - SOCIAL MEDIA

09.01 Social Media and Collaborative Systems

Full Research Papers

ID: 121
Beyond the Trustworthy Tweet: A Deeper Understanding of Microblogged Data Use by Disaster Response and Humanitarian Relief Organizations
Tapia, Andrea; Moore, Kathleen; Johnson, Nicolas
Penn State University, USA

ID: 122
Combining Real and Virtual Volunteers through Social Media
Reuter, Christian; Heger, Oliver; Pipek, Volkmar
University of Siegen, Germany

ID: 129
Extracting Information Nuggets from Disaster-Related Messages in Social Media
Meier, Patrick Philippe (1); Castillo, Carlos (1); Imran, Muhammad (1); Elbassuoni, Shady Mamoon (1); Diaz, Fernando (2)
1: Qatar Computing Research Institute, Qatar; 2: Microsoft Research

ID: 177
The Use of Social Media by Local Government in Response to an Extreme Event: Del Norte County, CA and the 2011 Japan Tsunami
Tyshchuk, Yulia; Wallace, William
Rensselaer Polytechnic Institute, USA

ID: 192
Retrieving and Exchanging of Information in Inter-Organizational Crisis Management
Ley, Benedikt; Pipek, Volkmar; Siebigteroth, Tim; Wiedenhoefer, Torben
University of Siegen, Germany
Research-in-Progress Papers

ID: 114
Dealing with Information Overload When Using Social Media for Emergency Management: Emerging Solutions
Hiltz, Starr Roxanne (1); Plotnick, Linda P. (2)
1: NJIT; 2: Jacksonville State University

ID: 152
Resilience: Two case studies on governmental social media use for emergency communication
Beneito-Montagut, Roser (1); Anson, Susan (1); Shaw, Duncan (2); Brewster, Christopher (1)
1: Aston University, UK; 2: Warwick University, UK

ID: 159
Tweet4act: Using Incident-Specific Profiles for Classifying Crisis-Related Messages
Roy Chowdhury, Soudip (1); Imran, Muhammad (2); Asghar, Muhammad Rizwan (3); Amer-Yahia, Sihem (4); Castillo, Carlos (5)
1: University of Trento, Italy; 2: University of Trento, Italy; 3: University of Trento, Italy; 4: Centre national de la recherche scientifique, France; 5: Qatar Computing Research Institute Doha, Qatar

ID: 228
Social-media Text Mining and Network Analysis to support Decision Support for Natural Crisis Management
Zielinski, Andrea (1); Middleton, Stuart E. (2); Tokarchuk, Laurissa (3); Wang, Xinyue (3)
1: Fraunhofer Institute of Optronics, System Technologies and Image Exploitation - IOSB, Karlsruhe, Germany; 2: University of Southampton - IT Innovation Centre, Southampton, UK; 3: Queen Mary and Westfield College, University of London, UK

ID: 249
A Fine-Grained Sentiment Analysis Approach for Detecting Crisis Related Microblogs
Schulz, Axel (1,2); Thanh, Tung Dang (1); Paulheim, Heiko (3); Schweizer, Immanuel (2)
1: SAP Research, Germany; 2: Telecooperation Lab, Technische Universität Darmstadt, Germany; 3: Knowledge Engineering Group, Technische Universität Darmstadt, Germany

ID: 261
Prepare, Manage, and Understand Crisis Situations using Social Media Analytics
Schaust, Sven; Kaisser, Michael; Walther, Maximilian
AGT Group (R&D) GmbH, Germany

ID: 272
Utilizing Community Volunteered Information to Enhance Disaster Situational Awareness
Merrick, David F.; Duffy, Tom
Florida State University Emergency Management and Homeland Security Program, USA

ID: 287
Delay Tolerant Disaster Communication with the One Laptop Per Child XO Laptop
Iland, Daniel Patrick; Voita, Don
University of California, Santa Barbara, USA

ID: 298
A step towards real-time detection and localization of disaster events based on tweets
Dittrich, Andréd; Lucas, Christian
Karlsruhe Institute of Technology (KIT), Germany
09.03 Community Engagement in Crisis Informatics Research

Full Research Papers

ID: 131

*Are Spontaneous Volunteers a Disruption, Resource or Partner? An Introduction for System Developers to Volunteer Roles in Crisis Management*

Rogstadius, Jakob (1); Teixeira, Claudio (1); Karapanos, Evangelos (1); Kostakos, Vassilis (2)
1: Madeira Interactive Technologies Institute; 2: University of Oulu

Research-in-Progress Papers

ID: 104

*Power Outage Communications: Survey of Needs, Infrastructures and Concepts*

Reuter, Christian
University of Siegen, Germany

ID: 236

*Innovation in Tailored Information Systems Design Through Upstream User Engagement: Passing the Baton in the EnRiCH Project*

O'Sullivan, Tracey Lynn; Corneil, Wayne; Kuziemsky, Craig Edward; Lane, Dan
University of Ottawa, Canada

ID: 295

*Advancing Community-Academic Partnerships as a Disaster Response Platform: Exploring Questions of Latency, Connectivity & Interoperability*

Franco, Zeno (1); Ahmed, Syed (1); Kuziemsky, Craig (2); Biedrzycki, Paul (3); Kissack, Anne (1)
1: Medical College of Wisconsin, USA; 2: University of Ottawa, Canada; 3: Department of Public Health, City of Milwaukee, USA

ID: 305

*Shaping societal impact: between Control and Cooperation*

Messemaker, Manne (1); Wolbers, Jeroen (1); Treurniet, Willem (2); Boersma, Kees (1)
1: VU University Amsterdam, The Netherlands; 2: TNO

ID: 306

*A Structured Equation Model of Collaborative Community Response*

Lane, Daniel Edward (1); O’Sullivan, Tracey (1); Kuziemsky, Craig (1); Berkes, Fikret (2); Charles, Anthony (3)
1: University of Ottawa, Canada; 2: University of Manitoba; 3: Saint Mary's University

09.04 Visual Analytics with Social Media for Crisis Management

Research-in-Progress Papers

ID: 183

*PhaseVis: What, When, Where, and Who in Visualizing the Four Phases of Emergency Management Through the Lens of Social Media*

Yang, Seungwon; Chung, Haeyong; Lin, Xiao; Lee, Sunshin; Chen, Liangzhe; Wood, Andrew; Kavanaugh, Andrea L.; Sheetz, Steven D.; Shoemaker, Donald J.; Fox, Edward A.
Virginia Tech, USA

ID: 263

*Understanding the Utility of Geospatial Information in Social Media*

Robinson, Anthony C.; Savelyev, Alexander; Pezanowski, Scott; MacEachren, Alan M.
The Pennsylvania State University, USA
THEME 10 - PRACTITIONERS’ TRACK

10.01 Practitioners’ Track

Practitioners’ Papers

ID: 245
Analysis of a First Responder Exercise: Requirements for Exercise-Support and Simulation
Max, Matthias (1); Sautter, Johannes (2)
1: German Red Cross, Germany; 2: Fraunhofer IAO, Germany

ID: 254
Interoperability during a Cross-Border Firefighting Operation at the Dutch-German Border
Weber, Benedikt (1); Deckers, Thomas (2); Wilson, Frank (3)
1: antwortING Ingenieurbüro PartG, Germany; 2: Fire Department City of Bocholt, Germany; 3: Veiligheidsregio Kennemerland, Netherlands

ID: 257
Social Media-Based Event Detection for Crisis Management in the Al Za’atari Refugee Camp
Walther, Maximilian; Kaiser, Michael; Schaut, Sven
AGT Group (R&D) GmbH, Germany

ID: 300
Quality Analysis After Action Report for the Crowdsourced Aerial Imagery Assessment Following Hurricane Sandy
Munro, Robert; Erle, Schuyler; Schnoebelen, Tyler
Idibon, USA

THEME 11 - OPEN

11.01 Open Track

Full Research Papers

ID: 108
Tackling Wicked Problems: Suicide in the US Military
Diptee, Darryl Dion
Naval Postgraduate School, USA

ID: 156
Developing an Incident Response Process Model for Chemical Facilities
Fortier, Stephen C.
George Washington University, USA

ID: 197
Computerized System to Enhance Situation Awareness: Key Challenges Associated with the Design, Evaluation, and Extension of a Prototype
Javed, Yasir (1); Norris, Tony (2)
1: COMSATS Institute of Information Technology, Abbottabad, Pakistan; 2: Massey University Auckland, New Zealand, New Zealand
List of ISCRAM2013 Posters

ID: 135
Emergent Behaviour in Hurricane Katrina: Implications for Social Media Technologies in Large-Scale Disasters
Hinds, Joanne; Calderon, Ana; Johnson, Peter
University of Bath, UK

ID: 180
Toponym-based Geotagging and Disambiguation for Social Media on Earthquake and Weather Events
Kitamoto, Asanobu
National Institute of Informatics, Japan

ID: 213
A Configurable Collaborative Web-based Framework for Supporting Inter-Organizational Humanitarian Crisis Situation Assessment
Do, Hong Khanh; Doherty, Brian
European Commission - Joint Research Centre, Institute for the Protection and Security of the Citizen, Italy

ID: 222
Professional integration of spontaneous volunteers in crisis response
Engelbach, Wolf (1); Vollmer, Maike (2) 1: Fraunhofer IAO, Germany; 2: United Nations University, Germany

ID: 226
Classification of mathematical models for emergency logistics management
Goesling, Henning; Geldermann, Jutta Georg August University Göttingen, Germany

ID: 232
Designing a Simulation Tool for Crisis Warning Impacts: A User-Centered Design Approach
Kluckner, Sigmund; Heintze, Katrin Ellice University of Stuttgart, Germany

ID: 235
Lebel, Bernard (1); Gagnon, Jean-François (1); Banbury, Simon (2); Rivest, Martin (3); Coulé, François (3); Comtois, Jean-Philippe (1); Tremblay, Sébastien (1)
1: Co-DOT, Université Laval, Canada; 2: C3HF Inc.; 3: Thales Research and Technology Canada

ID: 242
Semantic Reasoning for Intelligent Emergency Response Applications
Ongenae, Femke (1); Hristoskova, Anna (1); Tsiropkova, Elena (2); Tourwé, Tom (2); De Turck, Filip (1)
1: IBCN - iMinds - Ghent University, Belgium; 2: SIRRIS ID: 243

ID: 243
Emergencia: A Decision Support Tool for Coordinating Emergency Situations
González-Deleito, Nicolás (1); Tsiropkova, Elena (1); Dedecker, Jessie (2)
1: Sirris, Belgium; 2: AppLaunchLab, Belgium

ID: 247
Challenges and Opportunities in the use of Weibo by the Chinese Government for Earthquake Emergencies
Bo, Tao (1,2,3); Van de Walle, Bartel (2)
Dynamic indoor localization and awareness using sensor-networks

Rothkrantz, Leon
TU Delft, Netherlands, The Netherlands

The Potential of IT-Support for Training Exercises in the Field of Civil Protection

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Visual Analysis of Social Media Data in Emergency Situations by Aggregating Annotated User Movements

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When Facing a Nuclear Threat, What does the Public Expect from Social Media?

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Cloud computing and large scale agent based rescue management simulation

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