



The 3rd International Conference on Information and  
Communication Technologies for Disaster Management

In Vienna, Austria • 13 - 15 December 2016 •



## Tuesday, December 13<sup>th</sup>

**08:15 Registration**

**09:00 Opening session**

**09:45 Invited talk #1: Azzedine Boukerche** (University of Ottawa, Canada)  
*“Emergency Preparedness and Response Class of Applications: A new Challenge for the Next Generation of Wireless Sensor Networks, Public Safety and Security”*

Chair: Yassine Hadjadj-Aoul

**10:45 Coffee break**

**11:15 Plenary session #1: [The Role of wireless applications and social media for disaster management]**

Chair: Ivan Gojmerac

> **Social Media in Emergencies. How Useful Can they be?**

Daniela Knuth, Hermann Szymczak, Pinar Kuecuekbalaban & Silke Schmidt

> **The Challenge of Continuous User Participation in eBayanihan: Digitizing Humanitarian Action in A Nationwide Web Mobile Participatory Disaster Management System**

Ma. Regina Justina Estuar, John Owen Ilagan, John Noel Victorino, Nico Canoy, Mahar Lagmay & Maria Regina Hechanova

> **Crowdsourcing and Crowdtasking in Crisis Management: Lessons Learned From a Field Experiment Simulating a Flooding in City of the Hague**

Michael Middelhoff, Adam Widera, Roelof P. van den Berg, Bernd Hellingrath, Daniel Auferbauer, Jasmin Pielorz & Denis Havlik

> **Comparing Felt Reports and Tweets About Earthquakes**

Robert Power, Bella Robinson & Adrienne Moseley

> **Pictograms and Assessment Categories as Crisis Communication Language: Lessons From a Field Exercise with GDACSmobile**

Roelof P. van den Berg, Adam Widera, Sandra Lechtenberg, Michael Middelhoff & Bernd Hellingrath

**12:55 Lunch break**

**14:00 Plenary session #2: [Information Management & Decision Support Systems]**

Chair: Christian Flachberger

**> Advanced Information Systems for Enhanced Civil-Military Interoperability in Austria**

Ivan Gojmerac, Christoph Ruggenthaler, Maria Egly, Wolfgang Vorraber, Julia Brugger, Helmut Aschbacher, Katrin Panzenböck & Markus Christian

**> Real Time Transmission of Cultural Heritage 3D Survey in Case of Emergency**

Saverio D'Auria, Michele Luglio, Cesare Roseti, Rodolfo Maria Strollo & Francesco Zampognaro

**> Forest Fire Monitoring System Based on Aerial Image**

Seonghyun Kim, Wonjae Lee, Young-Su Park, Hyun-Woo Lee & Yong-Tae Lee

**>ThinkHazard! - Delivering Natural Hazard Information for Decision Making**

Stuart Fraser, Alanna Simpson, Ariel Nunez, Vivien Deparday, Simone Balog, Brenden Jongman, Richard Murnane, Nicolas Taillefer, Nicolas Chauvin, Olivier Morel, Audrey Hohmann, Marijn Kuijper, Andreas Burzel, Sophie Vermooten, Hessel Winsemius, Frederic Jacon & Pierre Giraud

**> A Communication and Multi-sensor Solution to Support Dynamic Generation of a Situational Picture**

Martina Umlauft, Christian Raffelsberger, Andreas Kercek, Alexander Almer, Thomas Schnabel, Patrick Luley & Stefan Ladstaetter

**15:40 Invited talk #2: Uberto Delprato (IES, Italy)**

*“Interoperability in disaster management: a hope or a wish?”*

Chair: Georg Neubauer

**16:40 Coffee break**

**17:00 Poster session #1**

**> Towards a Generic Data-Model for Cross-Media Communication During Disasters & Crises**

Gerhard Backfried, Ingrid Kais & Gerald Quirchmayr

**> Information and Knowledge Driven Collaborative Crisis Management: A Literature Review**

Mohammed Benali & Abdessamad Réda Ghomari

**> High Impact - Low Probability Incidents At a Coastal Metropolis: Flood Events and Risk Mitigation by Crowd-Tasking Systems**

Simone Wurster, Michael Klafft & Frank Fuchs-Kittowski

**> Traffic Jam Detection and Control by Crowdsourcing and a Social Network**

Kristina Taneva & Danco Davcev

**> A Social Network to Identify Responsibilities and Expertises in Crisis Scenarios**

Mandy Töppel, Marie Bartels & Christoph Nagel

**> The Methodology of UAV Route Planning for Fast 3D Reconstruction of Building Model**

Xiaocui Zheng, Fei Wang & Jianjun Xia

**> Management of Flood Risk in the Center of Ghardaia City with a Geographic Information System (S.I.G) After the Flashflood of 1st October 2008**

Farida Boulaghmen & Djillali Benouar

**End of first day**

## Wednesday, December 14<sup>th</sup>

**09:00 Invited talk #3: Gerry Foitik** (Austrian Red Cross, Austria)  
*“Solidarity, subsidiarity and sense of responsibility – the source code for our work in disaster management”*  
Chair: Jasmin Pielorz

**10:00 Coffee break**

**10:20 Plenary session #3: [Data Analysis for Disaster Management]**  
Chair: Jasmin Pielorz

**> Data Mining Twitter During the UK Floods**

Thomas Spielhofer, Deborah Markham, Reynold Greenlaw & Anna Hahne

**> Disaster Management Platform to Support Real-Time Analytics**

Daniel Wladdimiro, Pablo Gonzalez-Cantergiani, Nicolas Hidalgo & Erika Rosas

**> Integrating Health Indices Towards the Development of a Typhoid Disease Model Using STEM**

Isabelle-Lynn Co, Ma. Regina Justina Estuar, Kennedy Espina, Raymond Josef Edward Lara & Vikki Carr De Los Reyes

**> Integrating User Experience (UX) Elements in a Crisis Management Services Design Process**

Karim Touloum

**> Spatio-Temporal Data-Driven Analysis of Mobile Network Availability During Natural Disasters**

Lei Zhong, Kiyoshi Takano, Fangzhou Jiang, Xiaoyan Wang; Yusheng Ji & Shigeki Yamada

**> SMARTSOS: Systems for Maritime Advanced Rescue Through Satellite and Optimized Sensor Networks**

Lorenzo Bracciale, Pierpaolo Loreti, Michele Luglio, Cesare Roseti & Francesco Zampognaro

**12:20 Lunch break**

**13:20 Invited talk #4: Lorant Czaran** (UN)

*“Space technologies for disaster management - the mandate and role of the UN-SPIDER Programme implemented by the United Nations Office for Outer Space Affairs (UNOOSA)”*

Chair: Uberto Delprato

**14:20 Social event: “Schönbrunn” (Guided tour and dinner)**  
*Departure for “Schönbrunn” from the AIT at 14:30*

**22:00**

# Thursday, December 15<sup>th</sup>

**09:00 Invited talk #5: Yassine Hadjadj-Aoul (Inria, France)**  
*“Efficient support of Massive M2M communications during emergency situations”*

Chair: Ivan Gojmerac

**10:00 Coffee break**

**10:05 Plenary session #4: [Emergency Routing & Indoor Navigation]**

Chair: Gerhard Chroust

> **Development of an OpenStreetMap Based Safe Zone Routing System for West Valley Fault Earthquake Disaster in the Makati Central Business District, Philippines**

Mark Robert M Aldecimo; Marlene De Leon

> **Emergency Navigation Systems and Algorithms in Confined Spaces**

Huibo Bi

> **LifeRescue: A Web Based Application for the Emergency Responders During Building Fire Emergency Management**

Vimala Nunavath & Andreas Prinz

**11:05 Coffee break**

**11:25 Plenary session #5: [Forecasting and Early Warning Systems]**

Chair: Robert Stocker

> **Tsunami Evacuation Drill System Using Motion Hazard Map and Smart Devices**

Junya Kawai, Hiroyuki Mitsuhara & Masami Shishibori

> **Evacuation Instruction Training System Using Augmented Reality and a Smartphone-based Head Mounted Display**

Keisuke Iguchi, Hiroyuki Mitsuhara & Masami Shishibori

> **Public Warning and Alert System for Austria**

Ivan Gojmerac, Alexander Preinerstorfer, Christoph Ruggenthaler, Christine Schuster, Alexander Almer, Robert Stocker & Vinzenz Heussler

**12:25 Lunch break**

**13:25 Poster session #2**

> **Spatial-aware Iterative Integration of CrisisManagement Information Systems**

Betim Sojeva & Jingquan Xie

> **Seismic Vulnerability Assessment of Tipaza Bridges**

Mohamed Cherif Djemai & Mahmoud Bensaibi

> **Multi-Standard Transmitter Design Using Single/Double Conversion Technique Used for Rescue Operations**

Essaadali Riadh, Chokri Jebali, Said Aliouane & Ammar Kouki

> **Design of Agency Communication for Contingency Cellular Network**

Yao-Nan Lien & Jyh-Shyan Huang

> **KUnami Interface for Tsunami Wave Height Predictions Based on ComCot Model for Arabian Gulf, Gulf of Oman and the Arabian Sea**

Khaled AL-Salem

> **The Role of Media During Crisis Management**

Idir Ghenaïet

**14:25 Plenary session #6: [Education & Communication Strategies]**

Chair: Georg Neubauer

> **Experimental Evaluation on a Joint Attenuation Map Estimation/Indoor Localization by Means of Compressed Sensing-Based Wireless Tomography**

Kengo Yokota, Shinsuke Hara, Takahiro Matsuda, Kenichi Takizawa, Fumie Ono & Ryu Miura

> **Penumbral Tourism: Place-based Disaster Education Via Real-world Disaster Simulation**

Hiroyuki Mitsuhashi, Takehisa Inoue, Kenji Yamaguchi, Yasuichi Takechi, Mari Morimoto, Kazuhisa Iwaka, Yasunori Kozuki & Masami Shishibori

> **E-PreS: Monitoring and Evaluation of Natural Hazard Preparedness At School Community**

Michail Chatzidakis, Michail Loukeris, Kostis Gerakos & Stathes Hadjiefthymiades

**Software Engineering in the Light of Evolving Standards in CBRN Disaster Management**

Bernhard Jandl-Scherf, Harald Lernbeiss, Christian Derler, Peter Mohr & Manfred Pöckl

**15:45 Closing remarks and farewell**

**16:15**

**Plenary Session:**

15 min presentation + 5 min discussion

**Poster Session:**

Please bring your printed poster with you to the conference