



You are invited to a  
**Pre-Conference Workshop**  
at the ISSS 2010 Congress in Waterloo, Canada

**Modeling Support for Disaster Prevention and Recovery**  
**Systemic Challenges for First Responders**  
**July 18, 2010, 10:00 – 16:00**

**Wilfrid Laurier University, Waterloo, ON, Canada**  
**Bricker Academic Building, Room 113**

**Organizers:**

**Prof. Gerhard Chroust** (partner SIMRAD-project), J. Kepler University Linz, Austria<sup>1</sup>  
**Dr. Karin Rainer** (partner SIMRAD-project), Research Institute of the Red Cross, Austria  
**Dipl.-Ing. Erwin Schoitsch**, AIT Austrian Institute of Technology GmbH, Austria

**Motivation for the Workshop**

Natural and man made disasters have always threatened people. In the last decades both the awareness of threats and the occurrence of actual disasters (many of them man-made or at least triggered by human activities) has grown.

- Today's disasters usually endanger considerable more persons and larger areas in more diversified ways.
- Society has a basic interest to ensure that its environment behaves like a dependable system (providing *safety, reliability, availability, security, maintainability, survivability, etc.*). This implies the necessity of avoiding, eliminating or at least mitigating the negative impacts of disasters in order to re-establish dependability as fast as possible.
- In today's complex world a holistic, systemic approach is needed for training and supporting First Responders (i.e. *fire brigades, ambulance services, police forces*) with respect to interventions in the case of incidents.

We know that disaster prevention and recovery can be considerably improved by utilizing the potential of today's information and communication technologies

- to predict disasters
- to train First Responders emergency personnel to react quickly and properly using best practice methods,
- to support them in training and operation in many ways,
- to tactically guide interventions, allowing to plan ahead and predict the evolution of a disaster,
- to provide support logistics and recovery after the disaster.

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## **Workshop objective:**

In this workshop we will try to identify methods, best practices and software tools which are helpful in training and supporting First Responders.

We intend to look at the problems of training and interventions in a systemic way, considering all types of stakeholders with respect to both short time and long-term issues and problems.

Prime application of software will be the modeling of scenarios and environments, simulating disasters and reactions, providing simulation-based training, and using the predictive power of simulation in real disaster interventions. Key targeted technologies will be System Dynamics tools and Virtual/Augmented/Mixed Reality systems but other techniques should also be included.

We will correlate the proposed methods and tools to the needs of First Responders (an initial list of needs will be supplied to registered participants of the workshop).

We hope to include in this workshop participants from many different fields, from First Responders, from computer experts, psychologists, human factor specialists, etc.

Admission is free of charge for participants of the ISSS Congress (see [http://iss.org/world/Waterloo\\_2010](http://iss.org/world/Waterloo_2010)), can. \$ 30 otherwise.

## **PRELIMINARY PROGRAMME<sup>2</sup>,**

10:00 – 10:20: **G. Chroust, Welcome, Motivation**

10:20 -10:45: **N.N, *Trigger Speech*: Needs of First Responders for Training and Deployment**

10:45 – 11:10: **G. Chroust, *Trigger Speech*: Modeling support for First Responders by Modeling and Simulation, Augmented Reality, Process View (the SIMRAD projects<sup>3</sup>)**

11:30 –12:00: **Plenary discussion: examples, prototypes, ideas, applications, counterexamples**

13:00 – 15:45: Workshop Discussions: **Supporting First Responders**

Part A: **Virtual/Mixed/Augmented Reality in Training and Deployment**

Part B: **Modeling and Simulation**

Part C: **Taking a Process View**

15:45 – 16:00: **Workshop Summary, Conclusions and Outlook**

### **Further material:**

- Paper: Gerhard Chroust, Karin Rainer, Nadine Sturm, Markus Roth, Peter Ziehesberger: Improving Resilience Of Critical Human Systems In CBRN-Emergencies: Challenges For First Responders (to be presented at ISSS 2010)
- List of potential topics for the Workshop
- Excerpt of the Schedule for ISSS 2010

**Please register using the attached form or via <http://www.simrad.at/WorkshopWaterloo2010.aspx>**

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<sup>2</sup> detailed schedule will be adjusted participants' interest

<sup>3</sup> See [www.simrad.at](http://www.simrad.at)

## REGISTRATION FORM

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**Please enter details and return by email to:**

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Gerhard Chroust

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A-2346 Maria Enzersdorf, Austria

Surname:	
First name:	
Gender (Mr/Ms)	
Position/Title:	
Institution/Organization:	
Email address: * needed for registration confirmation and further communication	
Main domain of interest and/or expertise	
Do you intend to attend the ISSS Conference? (For information only!)	YES                  NO