

2nd International ISCRAM-CHINA Workshop, Harbin Engineering University, August 2007



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OVERVIEW

This report presents a summary of the comments and observations with respect to the 2nd International Workshop on Information Systems for Crisis Response and Management, in China (ISCRAM-CHINA-2007¹), is a post-conference meeting to the International Disaster Reduction Conference² (IDRC). ISCRAM-CHINA took place in Harbin from August 26-27, 2007. The conference was jointly organized by the ISCRAM-Community³ and the School of Economics and Management - Harbin Engineering University⁴ (HARBEU). The Workshop provided an outstanding opportunity for researchers, scholars, teachers, students, practitioners and policy makers in China as well as invited International delegates to address and discuss new trends and challenges in the area of Information Systems for Crisis Response and Management.

The subject matter dealt with aspect of design, development, deployment, operation, and evaluation of information systems for crisis response and management. Authors focused on tools, functionality, and/or interfaces that were being or should be provided for human users involved with crisis response and management. Contributions covered Crisis Response and Management in any phase, intersection of phases, and/or integration of phases of the Emergency Management and Preparedness lifecycle: Planning, Training, Mitigation, Detection, Alerting, Response, Recovery, and Assessment.

Evaluating Last-Mile Hazard Information Dissemination: A Research Project, or HazInfo Project, research findings were presented during Session 1: Information Systems along with 20 other papers that were presented in the same session. The HazInfo paper titled “Common Alerting Protocol Message Broker for Last-Mile Hazard Warning System in Sri Lanka: An Essential Component”, edited by Bartel Van de Walle (bartel@uvt.nl), Xiaodi Li (lixiaodi2000@hotmail.com), and Shuyu Zhang, was 1 of 115 papers published in the workshop proceedings, pages 59-64, selected from over 200 submissions. The residual session themes were – Business/Organization, Public Organizations/Government, and Mathematical Modeling.

1 ISCRAM-CHINA 2007 workshop website -- <http://www.conference-heu.com/>

2 International Disaster Reduction Conference official website -- <http://www.idrc.info/>

3 International systems for Crisis and Response Management Community website -- <http://www.iscrum.org/>

4 Harbin Engineering University official website – <http://www.harbeu.ac.cn/>

OBSERVATIONS AND COMMENTS

The HazInfo paper that discussed cutting edge research in the use of Common Alerting Protocol (CAP) was passionately received by the participants. Moreover, interested stakeholders expressed interest in collaborating in future research that is to be lead by LIRNEasia; especially in the development of the “P2P Multilanguage CAP Broker” for the region.

Opening day of the workshop witnessed prominent experts presenting a 45 minute keynote address in a variety of topics. Altogether there were 8 keynote addresses. Table 1 provides a synopsis of these presentations with comments on their possible bearing to the HazInfo project current and future work. Table 2 makes available a synopsis of the presentations that were attended by the reporter and was found to bear significance to the HazInfo project.

Overall the workshop was found to be intriguing; especially seeing Chinese scholars addressing issues related to natural and manmade disasters that threaten their livelihoods quite frequently. It was rewarding to hear of scientific approaches aimed at solving many of these problems focused on the greater good of Disaster Management for sustainable development. A key observation was to see students and practitioners, predominantly, in the faculty of Economics and Management taking the initiative to design, test, and deploy systems that in the past would have been carried out by Engineers.

Table 1- Selected keynote presentations with key points addressed and comments

Presentation Title and Speaker	Presentation Main Points	Notes/Comments
Strong Angel and InSTEDD, Dr. Eric Rasmussen (rasmussene@gmail.com)	Complex Humanitarian Emergencies are too large for a single organization to handle and effective response requires “emergent strategic collaboration”. Overview of Strong Angel I, II, & III ; lessons learned are 5 out of 6 communication did not work when needed Strong Angel III architecture – http://www.strongangel3.org/ based on Evaluation, Discovery, and Innovation Useful tools and services for collaboration: Simple Sharing Extension for bi-directional RSS Feeds, GATR inflatable VSAT, Toozl one once Laptop with 22 applications, second life for virtual meeting, GSM Smart phone for multipurpose communication, GALE broadcast monitoring system, Rondee free conference call, ReliefWeb, and GDACS for hazard alerts.	CAP was mentioned as a good protocol for information interchange. Dr. Rasmussen was interested in partnering in the LIRNEasia plus partners efforts to develop a P2P Multilanguage CAP Broker. He expressed interest to fund the CAP Broker project through InSTEDD (Innovative Support to Emergencies Diseases and Disaster) – http://www.instedd.org/ if other initiatives fail. The ideology of Strong Angel on developing protocols and systems for crisis management were inline with the HazInfo project development methodology; i.e. learn and develop through exercises.

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Blasts and Incident Simulation of Fires Prof. L. Lin (liutm@chinasafety.ac.cn)	<p>Planning and simulation goes hand in hand. Case studies show good planning but poor simulation has resulted in poor crisis management and loss of lives.</p> <p>All stakeholders must be educated of the plans in place and periodic drills must be conducted to ensure that all at risk are prepared</p> <p>Action + Relationships → Security</p>	<p>The power point presentation and speech was in Chinese. The simultaneous translations did not tell the full story.</p> <p>Simulation software package seemed valuable</p> <p>The moral story relating Prof. Li's experience discussing his work with a Buddhist Monk in Chendu (Sichuan Province) was quite fascinating; where the Buddhist Monk had said that he was also in the same business of providing security to the people through spiritual guidance and that security to people can be provided if good actions and relationships are set in place first.</p>
<i>Presentation Title and Speaker details unavailable!</i>	<p>The role of Media in reporting emergency information. When the Media did not report accurate information it resulted in unnecessary calamity among the public. Presentation addressed the failures.</p> <p>Case study of the SARS epidemic in China – the National Health Ministry was the sole authority for issuing bulletins to the public through media. During the period when it was uncertain as to whether the epidemic was viral or bacterial the Media reported it to be a bacterial infection. Therefore, people in the cities started to flee to their home town as a result took the viral infection to those areas along with them.</p>	<p>A good lesson on ensuring that “all-hazards” “all-media” type emergency alert and notification must be Precise, Serious, and Factorial!</p>
Automatic Detection and Monitoring of Internet Crisis	<p>Problem addressed is the enormous amount of Internet Hacking (3000 – 6000 hacks per month) affecting China Bank account losses aggregate to RMB 10,000 per month. 21% of the virus attacks on PCs recorded in China</p> <p>After implementing an detection and</p>	<p>Disaster in the virtual world impact economies at scales synonymous with large natural and man made disasters.</p>

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	<p>monitoring system over 1000 Hackers have been prosecuted</p> <p>International Corporation is essential to combat Internet threats because a typical scenario comprises Hacker in Country A using HTTP Server in Country B to hack in to Bank's Information System in Country C</p> <p>Schemes to guarantee rapid recovery of systems must be implemented</p>	
<p>Towards Network Enabled Disaster Risk Management</p> <p>Guy Weets (guy.weets@skynet.be)</p>	<p>Presentation was on EU research based on risk management -- Addressed the link between risk reduction, innovation, sustainable growth and international Corporation. Recognition must be given to policy measures to address the root causes of vulnerability</p> <p>Collaboration and Planning is important.</p> <p>EU long term goals – Full access to information, effective monitoring, effective early warning and alert, effective response, and full availability of broadband communication</p> <p>EU has invested Euro 160 million on R&D on Interoperability and Control Systems</p> <p>The cost of chipsets for developing wireless networks ranges between Euros 0.5 – 7 for bandwidths ranging from 1K – 15Mbps respectively. Therefore, building High Altitude Platforms (HAP), Manned Systems, Small Unmanned Arial Vehicles (UAVs), In-Situ sensors for hazard detection and communication is low cost</p>	<p>Striking quotes from the speaker --</p> <p>“Innovation causes new problems”</p> <p>“Single information space and Integration of System of Systems must be based on emerging technologies”</p> <p>“Common Alerting Protocol (CAP) and Tactical Situation Object (TSO) must be adopted by all emergency communication agencies”</p> <p>The speaker also mentioned that EU was engaging in research related to solving Multilanguage problem in the region, similar to the problem faced in Asia. During a one-on-one conversation, Mr. Weets expressed interested in the work being carried out by LIRNasia on the Multilanguage problem using CAP for alerting and notification. He mentioned that EU was far behind compared to what has been tested with regards to CAP in the HazInfo project</p>
<p>Global Public Health Intelligent Networks</p> <p>Dr. Thomas Grein (druryp@who.int)</p>	<p>GOARN – Global technology Partnership Coordination System, which increases the process of submitting disease samples to labs and receiving results within 2 hours compared 2 weeks as it would in the past.</p>	<p>All the information systems used by WHO are proprietary and built for in-house use only. Need to extend the information to the public as well as adopt cheaper and FOSS type systems for affordability,</p>

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	AIM – to provide rapid multidisciplinary disease surveillance and reporting	interoperability and scalability
Knowledge Management for Crisis Response Prof. Murry Jennex (murphyjen@aol.com)	Information overload is bad for incident based decision making. Apply “Sansu” – “to defeat your enemy understand the enemy”; i.e. understand where the knowledge is coming from. Hence, collaboration and Communication are important aspects of KM. KM = people + processes + technology Planning and Simulation is a cyclic process where re-planning is done based on the knowledge from simulations	Speaker has a lot of practical knowledge such being involved in solving Y2K problem for Nuclear Power Plants in USA. Quote from speaker – “Y2K issues never surfaced because all issues were well thought of, assessed, and fixed. Otherwise, over 300,000 devices would have failed and would have caused a Nuclear Meltdown” “Electromagnetic burst would shut down all systems in large areas!”
Sahana FOSS for Humanitarian Relief Mr. Chamindra De Silva (chamindra@opensource.lk)	Sahana is a Free and Open Source Software solution for Disaster Management Practitioners to adopt It’s a modular based architecture, which allows users to customize the application based on the requirements http://www.sahana.lk/	HazInfo project used Sahana Messaging Module to test the Common Alerting Protocol. Lanka Software Foundation, advocate of Sahan, will be a key partner in the development of a P2P Multilanguage CAP Broker. Sahana was one of two presentations from Sri Lanka

Table 2 – Selected presentations directly beneficial to the HazInfo project

<i>Presentation Title and Speaker</i>	<i>Presentation Main Points</i>	<i>Notes/Comments</i>
Preliminary Study on Tourism Crisis Pre-warning Information Management System Lijing Wang (wj347@sina.com)	The model focuses on burst characteristics, urgency, harmfulness, and dualism; where the functions are on -- information collection, information processing, risk analysis, and pre-warning. There are 4 subsystems – message collection, message handling, before hand alarm, and prediction.	The HazInfo project envisions extending its helpdesk function at the Hazard Information Hub (HIH) to the Hotel Industry in Sri Lanka as part of the project’s efforts to develop the Sarvodaya HIH in to a sustainable entity. Pre-studies such as the one presented would be valuable for the HIH.

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<p>The construction of a tourist Tourism Crisis Information Management System</p> <p>Yunsong Tang (tangyunsong6@126.com)</p>	<p>The management system uses an ontology based case based actions. The main system requirements are forecasting and warning subsystems. Intentions are to link the operation agents and crisis management units in China. The proposed database is the Tourism Industry Crisis Information Management System (TICIMS)</p> <p>The system will use web 2.0 and an ontology for Enterprise Integration</p>	<p>The speaker had mentioned an ontology called EIKO, which comprises 7 literals. However, the theory of this ontology was not stated in the paper nor was it made clear of its origin.</p>
<p>Designing artificial agents with self-awareness for disaster management scenarios</p> <p>Mrs. Kalthleen Keogh (k.keogh@ballarat.edu.au)</p>	<p>Presentation was on a methodology for a multi-agent based system for collaborative teamwork, coordination mechanism, and disaster management coordination. Idea is to use Agents in simulations of real world scenarios. These agents are modeled on the belief, desires, and Intentions ontology</p> <p>The proposed agents have been tested in simulated scenarios of bushfires using the NFC (Network Fire Chief) simulator</p>	<p>Sahana disaster management system can be enhanced to an agent based system; where the information consolidation and sharing can be based on a collaborative ontology, which does not depend on a centralized monotonic customization of an instance but allows for multiplicity of disaster management agencies to communicate with Sahana in an ad-hoc setting</p>
<p>Developing databases for developing countries</p> <p>Mr. Michael Howden (michael@aidiq.com)</p>	<p>Presentation focuses on case studies in Uganda, Indonesia, and Pakistan that discusses the various lessons learned in developing a Fleet Management and Monitoring System.</p> <p>The speaker stressed that developing the same database for different countries varies upon the client's requirements and dataset. Moreover, the system depends on the available infrastructure (communication and facilities, both)</p>	<p>The presentation was interesting as it focused on actual field level obstacles and not so much on the computer science.</p> <p>When asked if there were any literature related to setting up IT shops in communities of developing countries, the following books were recommended</p> <ul style="list-style-type: none"> - Technology for Humanitarian Action by Kevin M. Cahill - Engineering in Emergencies: A practical guide for Relief Workers by Jan Davis and Robert Lambert
<p>Scenarios Simulation of Fake Information Diffusion in Public</p>	<p>The paper uses the Patterned Chaos Forecasting model to simulate the propagation of fake information</p>	<p>The HazInfo project witnesses information mutation, which can be considered as fake information after</p>

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Crisis using Patterned Chaos Forecasting Mr. Tuo Liu (liutuo@163.com)	during a public crisis in a population. A MATLAB program was written to run the simulations. The simulation results were tested and shown for cases where the information acceptance probability of the neighbor is 0.5, 0.56, and 0.8. The objective was to investigate the patterns and inference common rules.	the mutation. As a result the populations executed the wrong emergency response plans during live exercises, which simulated a crisis of a cyclone approaching the community. This methodology or referenced research can be used as a guideline to

Recommendations to the Organizers

- Distribute (electronically) a copy of the program in advance to notify speakers of the session they are speaking in and the time allocated. Had to wait till registration to find out these details.
- It was a good idea supplying a sheet with a list of contacts. However the Chinese participants names were in Chinese, which is of no use to the international community (especially if the workshop is advertised as an international event then English must be used)
- Spend a little more time editing the proceedings to ensure consistency and accuracy as some of the abstracts were incomplete and the fonts used sometime differed from paper to paper, sometime even in the same paper
- Try not to segregate the distinguished participants (so called invited guests) from the rest because we are all there to interact with all.