Disaster Management is the professional discipline responsible to mitigate, prepare for, respond to and recover from disasters caused by natural hazards, man-made actions or technological accidents, with ultimate scope to save lives, property and the environment. In order for all four phases of disaster management to take place in an effective and efficient manner, the involvement of expertise from different authorities and organizations is required. Expert individuals and teams from civil protection, police, fire and rescue services, health and ambulance services, engineering sector, utility companies, local authorities, central government, relief bodies armed forces, research and observatory centers, humanitarian bodies and others, work together to manage the life cycle of a disaster.

With the increased number of disasters during the last decades caused by the new types of technological accidents, climatic change and human conflicts the number of losses in terms of human lives, as well as in terms of money has been increased. Thus, nowadays the need for collaboration of experts and support from advanced ICTs in managing disasters is present and more demanding than ever.

Developments of distributed ICTs during recent decades has been proven that can support a number of disciplines – including disaster management – in making more informed and timely decisions, improving their practices and overall achieving their goals. Such technologies include but not limited to early warning systems and alerting technologies, data mining and advanced decision support systems, data visualization techniques, data and system integration frameworks, next generation collaborative technologies and Web 2.0, service oriented approaches, and grid technologies – should be further aligned for the purpose of augmenting the effectiveness and efficiency of disaster management approaches towards sustainable developments and livelihood. Some latest developments and work in progress is presented in this special issue as follows.

The first article, namely “Soft-Checkpointing Based Hybrid Synchronous Checkpointing Protocol for Mobile Distributed Systems” by P. Kumar and R. Garg, proposes “a hybrid checkpointing algorithm, wherein, an all-process coordinated checkpoint is taken after the execution of minimum-process coordinated checkpointing algorithm for a fixed number of times” The proposed algorithm can be applied in distributed systems and ad hoc networks, which in turn can further support disaster management processes.

The second article, “Matrixes of Weighing and Catastrophes” by J. G. Hernández R., M. J.
García G. and G. J. Hernández G, investigates and presents the Matrixes Of Weighting with multiplicative factors, and shows their application in the pre-catastrophe phase, when choosing possible shelters and in the post-catastrophe phase, by aiding to hierarchies which infrastructures to be recovered after a catastrophe.

The following article, namely “Information Communication Technology and a Systemic Disaster Management System Model” by J. Santos-Reyes and A. N. Beard, “presents some aspects of the ‘communication’ processes within a Systemic Disaster Management System Model” and establishes the need addressing “explicitly aspects that may affect the communication process between organizations dealing with disasters and the general public when using ICTs”.

Finally, the fourth article of this special issue “A Next Generation Technology Victim Location and Low Level Assessment Framework for Occupational Disasters Caused by Natural Hazards” by N. Bessis, E. Asimakopoulou, P. Norrington, S. Thomas, and R. Varaganti uses an occupational disaster scenario in which advanced ICT utilization could present emergency managers with some collective computational intelligence in order to prioritize their decision making, according to the assessment of victims’ health condition.

It is believed that the authors’ contribution to this special issue of the International Journal of Distributed Systems and Technologies will offer to the disaster management and ICTs disciplines experts the ground for more collaborative research and development towards a safer environment.

Finally, I would like to thank the editor-in-chief, Dr Nik Bessis and IGI Global for the hospitality of this special issue in the International Journal of Distributed Systems and Technologies (IJDST).

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Guest Editor
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