Editorial introduction on context-aware system and intelligent middleware for smart grid

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Biographical notes: Der-Jiunn Deng received his PhD in Electrical Engineering from National Taiwan University in 2005. He joined National Changhua University of Education as an Assistant Professor in the Department of Computer Science and Information Engineering in 2005 and then became an Associate Professor in 2009. His research interests include multimedia communication, quality-of-service, and wireless networks. In 2010 and 2011, he received the Top Research Award of National Changhua University of Education. He served or is serving as an editor and guest editor for several technical journals. He also served or is serving on several symposium chairs and technical programme committees for IEEE and other international conferences. He is a member of the IEEE.

Chin-Feng Lai is an Assistant Professor at Institute of Computer Science and Information Engineering, National Ilan University since 2011. He received his PhD in Department of Engineering Science from the National Cheng Kung University, Taiwan, in 2008. His research interests include multimedia communications, sensor-based healthcare and embedded systems. After receiving his PhD, he has authored/co-authored over 60 refereed papers in journals, conference, and workshop proceedings about his research areas within two year. He was selected an honorary member of the Phi Tau Phi Scholastic Honor Society of the Republic of China in 2009 and TC member of Multimedia Systems & Applications Technical Committee (MSATC), IEEE Circuits and Systems Society, 2009. He is also a member of the IEEE as well as IEEE Circuits and Systems Society and IEEE Communication Society.

Due to the shortage of energy resources, the 'smart grid' technology has been promoted rapidly as a solution to solve issues of energy depletion, limited natural resources and global warming. These 'smart grids' aim to provide electricity to end-users through a two-way digital technology that control end-users' devices to save power in a much more easy and simple way. That is, end-users will be able to allow the smart grid to remotely control all selected devices in their home conveniently and easily in accordance with

tracks of all electricity flowing in monitoring systems. This special issue is to discuss state-of-the-art research pertaining to smart grid in the area of context-aware system and intelligent middleware. The call for papers for this special issue attracted submissions from Asia and the USA covering a wide range of topics in the field of context-aware system and intelligent middleware for smart grid. Each paper was carefully evaluated by at least two reviewers. This careful evaluation process has allowed us to select three high quality research papers. We strongly believe that the selected papers will make a significant contribution to researchers, practitioners, and students working in this field.

The first paper is related to the wide area measurement systems (WAMS). 'Communication infrastructure planning for wide area measurement systems in power systems' by Mohammad Shahraeini et al. proposes a new approach for designing communication infrastructures of power systems. The second paper addresses fault tolerance in computational grid. 'Implementation of the fault tolerance in computational grid using agents by meta-modelling approach' by C. Srimathi and J. Vaideeswaran focuses on modelling the computational grid, interpret them and add agents to the existing workflow for fault diagnosis and make the precautionary measure. The third paper is about aggregated electric vehicle smart charging. 'Real-time push middleware and mobile application for electric vehicle smart charging and aggregation' by Siddhartha Mal and Rajit Gadh presents a real-time push middleware and mobile application for data and multimedia content delivery to enable electric vehicle smart charging and aggregation.

We would like to thank all authors who have submitted papers to the special theme and in particular those whose papers have been accepted for this issue. Assistance from the editorial staff of the *International Journal of Communication Networks and Distributed Systems* is also much appreciated. The editors also wish to acknowledge all those who have generously given their time to review the papers submitted for consideration for this special issue. Finally, our special thanks go to Dr. Sudip Misra and Professor Isaac Woungang (Editors-in-Chief) for their valuable support throughout the preparation of this issue.