Editorial

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Biographical notes: Ming Li has been a faculty in the Department of Computer Science, California State University, Fresno, since August 2006. He received his MS and PhD degrees in Computer Science from The University of Texas at Dallas in 2001 and 2006, respectively. His research interests include QoS strategies for wireless networks, robotics communications, and multimedia streaming over wireless networks. He is a member of ACM and IEEE.

H. Chen is on the faculty of the Department of Mathematics and Computer Science, Virginia State University. Before he worked as a software developer in industry, he spent a few years in geophysical research. His primary research interest is in computer systems and networking. He served as journal guest editors and various IEEE conference program committees. He is a member of the IEEE and the ACM. His research has been supported by the US National Science Foundation.

We are pleased to witness the continuing success of the International Workshop on Sensor Networks, which we launched a few years ago as a forum for researchers and practitioners to exchange research and development in sensor networks and applications. The 5th International Workshop on Sensor Networks (SN 2012) was held in conjunction with the 21st International Conference on Computer Communication Networks (ICCCN 2012) on July 30, 2012 in Munich, Germany. This special issue includes extended work of a few papers that were presented in the workshop programme. Akker and Blondia investigated the feasibility of using 'virtual gateways' to enable connectivity among different MAC protocols in heterogeneous sensor networks. They exhibit a MultiMAC stack implementation in TinyOS for Tmote Sky platform with desirable features such as flexibility and extensibility. The evaluation focusing on delivery ratio and duty cycle validates its capability of maintaining satisfactory performance despite of the overhead. The novelty of this approach is that using virtual gateways, it is possible to connect multiple MAC protocols on top of one single, shared radio interface, thereby facilitating software update and reducing the cost of additional hardware. We invite readers to check out their paper entitled 'Virtual gateways: enabling connectivity between MAC heterogeneous sensor networks' in this special issue and pay attention to their implementation details and this research team's continuous development on this topic. Coluccia and Ricciato presented an open source Software-Defined Radio tool that collects and processes received signal strength (RSS) measurements from incoming packets. This tool is in compliant with IEEE 802.15.4 standard and can be used for various applications that require RSS Indicator calculation. The major contribution of this work is to allow researchers to experiment RSS-related aspects with commercial devices. The authors have illustrated an application of the tool using the localisation problem of wireless sensor networks. We believe interested readers can benefit from their paper entitled 'A software-defined radio tool for experimenting with RSS measurements in IEEE 802.15.4: implementation and applications'. Yousaf et al. studied a large wireless network constituting a radio telescope and proposed a fully decentralised event detection algorithm based on collaborative local data analysis. The key challenges of this scheme are how to effectively filter out those triggers that need further processing and maintain satisfactory performance in unreliable communication environment. The authors conducted bandwidth requirement analysis and performance analysis to extensively investigate various tradeoffs of the approach. We welcome readers to check their paper titled 'Reliable localised event detection in a wireless distributed

radio telescope' for further details. All papers went through three regular reviews for their conference papers and one to two additional reviews for their extended versions. We are very pleased that these research teams allow us to entertain our readership with their work. We believe our readers can certainly benefit from their contributions. Last, but not the least, the ICDCS 2012 organisers' outstanding leadership has made the workshop a success and the journal editorial staff's diligent work has also made this special issue possible. We are grateful to the ICCCN 2012 organisers, in particular, Dr. Krishna Kant, George Mason University/NSF, USA, Dr. Xiaobo Zhou, University of Colorado, Colorado Springs, USA, Dr. Fan Zhai, Texas Instruments, USA, and Dr. Christian Poellabauer, University of Notre Dame, USA and to the journal editorial staff.