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## Editorial

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### Syed Obaid Amin\*

Department of Computer Science,  
Yale University,  
New Haven, CT 06511, USA  
E-mail: obaid.amin@yale.edu  
\*Corresponding author

### Al-Sakib Khan Pathan

Department of Computer Science,  
Kulliyyah (Faculty) of Information and Communication Technology,  
International Islamic University Malaysia (IIUM),  
Room: KICT 4.42, ICT Building,  
Jalan Gombak, 53100, Kuala Lumpur, Malaysia  
E-mail: sathan@ieee.org

### Syed M. Rahman

Department of Computer Science and Engineering,  
University of Hawaii-Hilo,  
200 W. Kawili St., Hilo, HI 96720, USA  
E-mail: srahman@hawaii.edu

**Biographical notes:** Syed Obaid Amin received his PhD in Computer Engineering major in Computer Networks from Kyung Hee University, South Korea in 2009. Currently, he is a Postdoctoral Research Associate in Yale University and Franklin & Marshall College, USA. His major research interests are network security, VoIP, sensor networks and transport layer protocols. He is a Sun Certified Java Programmer (SCJP2), scholarship holder of Institute of Information Technology Assessment (IITA)-Korea and a lifetime member of Pakistan Engineering Council (PEC).

Al-Sakib Khan Pathan received his PhD in Computer Engineering in 2009 from Kyung Hee University, South Korea and his BSc in Computer Science and Information Technology from Islamic University of Technology (IUT), Bangladesh in 2003. He is currently an Assistant Professor at the Computer Science Department, International Islamic University Malaysia (IIUM), Malaysia. His research interest includes wireless sensor networks, network security, and e-services technologies. He has served as a Chair, organising committee member, and technical program committee member in numerous international conferences/workshops. He is also serving as the Editor-in-Chief/Editor of several journals. He is a member of IEEE.

Syed (Shawon) Rahman is an Assistant Professor in the Department of Computer Science and Engineering at the University of Hawaii-Hilo and an Adjunct Faculty of Information Technology, Information Assurance and Security at the Capella University. His research interests include software

engineering education, data visualisation, data modelling, information assurance and security, web accessibility, and software testing and quality assurance. He has published more than 50 peer-reviewed papers. He is an active member of many professional organisations including ACM, ASEE, ASQ, IEEE and UPE.

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Right from its beginning, the internet has proven to be a vital medium of communication for society, be it entertainment, business, telecommunication, etc. It has rapidly found its way into our daily activities. Due to our high dependence on its functionalities, it can be regarded as one of the most integral parts of our lives. By observing the success of the internet and packet-switched networks, recent initiatives such as next-generation networks (NGN) and IP multimedia subsystem (IMS) have been undertaken to provide a seamless architecture for various access technologies. Furthermore, by integrating different technologies, e.g., service delivery platform (SDP) and IMS, easy service delivery, execution and management are now possible. Other issues, such as point-to-point and broadcasting communications, data and multimedia oriented services, mobile and cellular systems, fast fibre and mobility, remain a challenging endeavour and, to say the least, the end-to-end picture is still unclear.

On the other hand, efforts such as 6LoWPAN are also trying to connect resource constrained sensor networks to the internet to provide a ubiquitous environment, creating the 'internet of things'. This leads to a highly distributed network of devices communicating with human beings as well as to other devices. With the increase of heterogeneity, it becomes very difficult to ensure interactions with devices in a unified manner. In short, even though the recent advances in network convergence offer new realities, there are several research challenges and issues that need to be addressed. For example, the heterogeneity of the networks imposes difficulties and challenges in ensuring network security, QoS provisioning, route optimisation and so on.

As this special issue aimed to get the latest advancements in the areas of next-generation and resource-constrained converged-networks, the papers have been submitted from the authors of different backgrounds working on various aspects of the issues related to the scope of the call. We have also included a few invited papers considering the interests and benefits of the readers. The invited survey papers could really be useful even for the general readers having some knowledge about the NGN. Among the submitted and invited papers, after careful reviewing, some papers were suggested for some modifications. Accordingly, authors have responded with the improved versions of the papers. The works from diverse fields make this special issue a good all-in-one platform for getting the essence of a broad area of next-generation and resource constrained converged networks.

The paper titled 'A seamless handover scheme for vehicles across heterogeneous networks' by Prakash et al. have discussed the seamless handover issue for vehicles in a heterogeneous network scenario. The authors have introduced handover for the vehicular scenario using network mobility (NEMO) and evaluated the performance of the handover mechanism in multiple mobile Router-based networks. This work also presents a good background of NEMO handover and other related works.

Future wireless network (FWN) is now-a-days a very hot research issue. The predictions about FWNs will be tested in the coming years. Hence, the paper titled, 'Future wireless networks: key issues and a survey (ID/locator split perspective)' by

So-In et al. have given an overall idea of the FWN area. The ‘easy read’ style presentation of the authors could help the general readers in understanding some key points about FWN. We believe the researchers are working in this area may get important directions for their works as well.

Qiang Duan’s paper, ‘End-to-end modeling and performance analysis for network virtualisation in the next-generation internet’ mainly proposes a new model for end-to-end network service delivery systems in network virtualisation environments. It also presents the techniques developed for analysing end-to-end performance of network service delivery in the virtualisation based internet. This paper clarifies the concept of network virtualisation in the next-generation internet that could be beneficial for the readers. Overall, it is a good addition to this special issue both for the general and advanced readers of the area.

To make this issue more comprehensive and complete, we have included three invited papers in this special issue as well. The first paper in this regard titled, ‘The top 10 cloud-security practices in next-generation networking’ by Halton and Rahman discusses an important aspect of next-generation networking, called ‘cloud computing’. Computer networks are moving out of the LAN and adopting cloud computing more progressively. However, cloud computing raises some severe security concerns. This paper explores the security ramifications of cloud-adoption and presents a collection of best-practices for security in the cloud. Authors discuss the 23 best practices and provide the top-ten security issues that enterprise can at least implement on their own.

The second invited paper is from Rossi Kamal et al., ‘A mobile middleware to solve interoperability problems in VOIP streaming session,’ which presents an architecture of mobile middleware that solves interoperability problems of VoIP protocols namely SIP, H323 and Jingle. Although the work seems to be on in preliminary stages right now, but the authors addressed an interesting research problem, which we presume would get more attention in coming years.

Lastly, the contribution of Hani Alzaid et al., ‘A taxonomy of secure data aggregation in wireless sensor networks,’ is included to provide a comprehensive and detailed taxonomy of secure data aggregation in wireless sensor networks (WSN). After providing an overview of security issues in data aggregation in WSN, authors discussed the ‘state-of-the-art’ of secure data aggregation schemes. Authors also provide classification criteria for these schemes. This in-depth article is an interesting read for the students and researchers who are interested in WSN security issues and want to get a complete picture.

We have tried to make this issue as flawless as possible within our capacity. We would like to express our greatest appreciation to the editor-in-chief, Professor Sudip Misra, other editorial staffs, and reviewers for their continuous support and guidelines for preparing this special issue. Without their support, this work may never have been completed.