Editorial

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Biographical notes: Maurice Mulvenna is a Senior Lecturer in Computer Science at the University of Ulster's School of Computing and Mathematics. He has a research career spanning over 17 years in Academia and Industry. He is principal investigator and grant holder in research grants worth around $6M in the areas of context-aware computing and artificial intelligence. He serves on the international programme committees of conferences including *International Conference on Smart Homes & Health Telematics 2006*, *IEEE Pervasive Computing 2006*, *IEEE-ACM Web Intelligence (2004–2006)* and *ACM Workshop on Continuous Archival & Retrieval of Personal Experiences (2005–2006)*. He is a member of the BCS, IEEE and ACM.

Alex Galis is a Visiting Professor in the Networks and Services Research Group of the Department of Electronic and Electrical Engineering, University College London. He was Principal Investigator of the MISA and FAIN projects and leading the UCL activities in the MANTRIP, WINMAN, HARP, CONTEXT, E-NEXT, M-CDN, AMBIENT NETWORKS projects – part of the European IST research programme. He has published four books *Fast and Efficient Context-Aware Services* (John Wiley and Sons, 2006), *Programmable Networks for IP Service Deployment* (Artech House, 2004), *Deploying and Managing IP over WDM Networks* (Artech House, 2003), *Multi-Domain Communication Management* (CRC Press, July 2000), and over 100 publications in the field of networks and services and distributed systems.

Simon Dobson has a research career spanning over 15 years in Academia, Government and Industry. His research centres around pervasive computing and advanced software technology, addressing both theory and practice and being supported by an extensive record of published work (including papers in CACM, JPDC, EHCI and ECOOP) and a direct involvement in grants worth around EUR7M. His expertise is widely recognised internationally: he serves on the reviewing and/or programme committees of conference and journals including *PMCJ*, *PERVASIVE*, *WAC*, *sOc-EUSAI*, *ECOOP*, *SAPIR*, *MUCS*, *MPAC* and *IEEE Communications*, as an invited Editor for a special issue of *JNSM*, acted as an invited participant in a number of EU strategic workshops, and sat on the EU expert panel in next-generation adaptive communication systems. As a Co-founder and CEO of a research-led start-up company he also has experience in steering basic research to commercialisation. He is a Chartered Engineer and member of the BCS, IEEE and ACM.

Ahmed Karmouch is Professor of Electrical and Computer Engineering and Computer Science at the School of Information Technology and Engineering, University of Ottawa. He is involved in several projects with Bell Canada, Mitel, National Research Council Canada, Ericsson Canada

and France Telecom. He is a partner in the *WWI: Ambient Networks*, a European Sixth Framework Integrated Project. His current research interests are in distributed multimedia systems and communications, mobile computing, context aware ad hoc communications, and ambient networks. He has published over 200 papers in the area of Multimedia Systems, Ad hoc Communications and Mobile Computing, he is member of ACM and IEEE, he has served in several program committees, organised several conferences and workshops and served as Guest Editor for IEEE Communications magazine, Computer Communications, and others.

The area of autonomic communication and computing encompasses new paradigms for networking communication and computation. This next generation of systems will require a great degree of research in self-knowledge, self-management and introspective capability in order for such systems to gain an understanding of events and situations. The issue of context in autonomic communication and computing is an exciting new area of research, which can prove extremely valuable and informative to ubiquitous, pervasive and ambient intelligence research. This special issue invited prospective authors to submit topical and original research and review papers to address issues in context in autonomic and situated communication. We received a significant number of publications and after a lengthy editing process, selected six papers of high quality, each of which examines particular perspectives of research, in context, in the field of autonomic communications and computing. The first article by Kevin Curran, Chris Nugent, Maurice Mulvenna and Alex Galis and provides a timely review of the literature in this rapidly growing area.

The paper by Rami Cohen and Danny Raz examines the requirements of context distribution systems that embody Context Aware Services (CASs) and explores the architectural decisions regarding the definition of context items, the way context information becomes available to the CASs and the algorithmic aspects of disseminating this information. Their results indicate that a modular approach in which context information is provided in many network locations by brokers though an open simple API is both powerful enough to provide the required context information, and simple enough to be easily implemented.

The paper by Markus Huebscher, Julie A. McCann and Asher Hoskins presents an Autonomic Network Service architecture, which uses ubiquitous computing to aid in the monitoring of medical patients at home. Their paper examines the application of quality of context and trustworthiness principles for Autonomic Network Services.

The paper by Lawrence Cheng, Alex Galis, Antonis Lazanakis, George Karetsos and Spyros Denazis presents a novel programmable architecture called the Future Active IP Networks (FAIN), which supports self-adaptation to changes in network context through autonomic reconfiguration of the underlying network elements. The paper identifies the characteristics and features of this next generation programmable network architecture that supports network context-aware capabilities.

The paper by Jaime Martín Serrano, Javier Justo, Ricardo Marín, Joan Serrat, Nikolaos Vardalachos, Kerry Jean and Alex Galis presents the authors' CONTEXT framework, designed for the creation, deployment and management of context-aware multimedia services using programmable network facilities. The paper describes a policy-based service management layer for the architecture, coupled with an execution layer to assure context-aware multimedia services over the network.

The paper by Xiaoyuan Gu and Lars Wolf explores aspects of autonomic communications from a particular perspective of context-awareness and distributed policy-based management. They present their work on a proposed autonomic architecture with the POEM model including its protocol design.

We hope that this review paper and the five accompanying articles help to describe the landscape of research currently under way in the field of using context in autonomic communications and computing.

Acknowledgements

The Guest Editors of this special issue on Context in Autonomic Communication and Computing of the *International Journal of Internet Protocol Technology* (IJIPT), would like to thank the Editor in Chief, Professor Han-Chieh Chao, and all the authors who contributed to this special issue. To the authors whose papers were selected for this issue, we would like to record our appreciation for their commitment and cooperation. We would also like to record our thanks to the following for their contribution to the development of this special issue: Yuanshun Dai, Simon Dobson, Stefan Fischer, Xiaoming Fu, Theo G. Kanter, Jonathan Lee, Althea Liang Qianhui, Mikhail Smirnov, Huaglory Tianfield.