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## Preface

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**Biographical notes:** Jason C. Hung is an Associate Professor of the Department of Information Management, Overseas Chinese University, Taiwan. His research interests include multimedia computing and networking, distance learning, e-commerce and agent technology. He received his PhD in Computer Science and Information Engineering from Tamkang University in 2001. He participated in many international academic activities, including the organisation of many international conferences. He is the Associate Editor of *International Journal of Distance Education Technologies*, published by Idea Group Publishing, USA. He is a member of the IEEE Computer and Communication Societies and Phi Tau Phi Scholastic Honor Society.

Kuei-Ping Shih received his BS in Mathematics from Fu-Jen Catholic University, Taiwan, in 1991 and PhD in Computer Science and Information Engineering from National Central University, Taiwan, in 1998. After two years of military obligation, he joined the Faculty of the Department of Computer Science and Information Engineering, Tamkang University, Taiwan, as an Assistant Professor in 2000. He served as a Programme Area Chair in the IEEE International Conference on Advanced Information Networking and Applications (AINA), 2005, and as a Technical Track Chair in the IEEE International Conference on Information Technology: Research and Education (ITRE), 2005. His research interests include wireless networks, sensor networks, mobile computing and network protocols design. He is a member of the IEEE Computer and Communication Societies and Phi Tau Phi Scholastic Honor Society.

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Mobile ad hoc networks (MANETs) have been received much attention in the last decade. A MANET is a network automatically configured by mobile stations without any assistance of existing infrastructures. Rapid change of topology induces a great challenge in designing protocols in MANETs. Therefore, the special issue focuses on the state-of-the-art wireless networking technology related to the topic. Seven papers are included in this special issue.

Mobile agents (MAs) are software abstraction and are capable of supporting users' movements between computer terminal interfaces through networks. The main advantage of MAs is to convert computational client/server round trips to relocate data bundles and to reduce the network load. Moreover, MAs also support asynchronous execution on multiple heterogeneous network hosts. Accordingly, Mobile Agent Technology (MAT) has gained considerable interest both in the research community and in the industry. The first paper, 'An agent-based architecture for dynamic service provisioning in 3G mobile communication networks' by Chie Dou and Yia-Pei Chen, proposes a mobile agent (MA)-based architecture in 3G mobile networks to reduce signaling and service download traffic and to shorten the

call setup time. Besides, performance analyses on the download traffic and call setup time are also performed.

Security is also an emerging problem for MANETs. In MANETs, no infrastructure is existed. Multi-hop transmissions are fundamental and essential for MANETs. However, it is possible that a station would not forward packets for others in order to preserve its energy. The station is termed as a *selfish node*. The next paper, 'A gradual solution to detect selfish nodes in mobile ad hoc networks' by Djamel Djenouri and Nadjib Badache, proposes a gradual solution to detect selfish nodes in MANETs. The proposed technique utilises two-hop acknowledgement to detect selfish nodes. The overhead can be decreased gradually.

In cellular networks, handoff is a practical and important issue. Handoff is the transition of signal transmission from one base station to another adjacent base station when a mobile user moves around. To provide a seamless and quality-satisfied service is the major concerns for handoff in cellular networks. The next paper, 'A novel handoff algorithm for hierarchical multimedia wireless networks' by Ying-Hong Wang and Kuo-Jan Tseng, proposes a

handoff algorithm, named Hierarchical Multimedia Wireless Network (HAHM), for hierarchical multimedia wireless network. A cell of the most suitable tier will be selected for a mobile user in order to provide enough resource for the requirement of the user.

QoS includes several characteristics, such as delivery delay, delay variations, and consistent data throughput capacity. Therefore, to provide QoS can be defined as the ability to provide consistent, predictable data service delivery to satisfy customer application requirements. Different techniques providing different levels of QoS treatments are proposed to satisfy these QoS requirements. The next paper, 'Advanced tools for resolving complex issues in networking' by N. Meskaoui and D. Gaïti, proposes an extension to a networking platform with intelligent capabilities and defines an agent behaviour to resolve a specific problem faced by DiffServ networks.

Software agent is an ideal architecture to deal with the information overload and the disconnected computing. However, the software agent cannot be applied into current Web infrastructure due to the business and security issues.

The next paper, 'Integrating the Havana agent platform into the existing web infrastructure' by Qusay H. Mahmoud and Leslie Yu, proposes a platform integrated into the existing Web Infrastructure. The detailed analysis of the business model of the system is also shown in the paper.

E-commerce among organisations and individual customers are very common nowadays. However, e-commerce brings some new and pressing challenges. One important challenge on e-commerce is non-repudiation. Therefore, the next paper, 'Games for non-repudiation protocol correctness' by K. Adi, L. Pene and L. Sullivan, investigates the correctness of non-repudiation protocols with a trusted third party. Besides, the paper also uses game theory results to show the best show the best level of fairness.

The guest editors would like to thank the authors for their contributions to the special issue. In addition, we also would like to express our gratitude to Dr. Laurence T. Yang, the Editor-in-Chief, for his kindly help to make this issue possible. The most importance is that the readers will enjoy reading all these papers.