

Guest Editorial: Special Section on Wireless Internet

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WIRELESS communications have made spectacular progress in recent years. In particular, the merge of various wireless communication systems and the Internet has become more critical so that users can enjoy all kinds of services in the Internet while owning mobility. For example, modern wireless networks can support Internet applications for web accessing and multimedia services. Many issues need to be addressed for such combinations. Host mobility adds a new dimension to many research issues, such as network protocols, resource managements, Web access, and multimedia transmission. For different applications, diverse traffic types should be supported. Lightweight mobile computing devices, such as PDAs and Bluetooth, will be attached to the Internet. Various wireless communication devices, such as Bluetooth and wireless LANs, will be hooked up to the Internet. All these issues bring new challenges.

This special section is targeted at the related issues in wireless Internet. More than 50 submissions were received, and 10 papers were accepted in this special issue. The first five papers cover the service issues in wireless Internet. The paper by B. Emako, R. Glitho, and S. Pierre discusses the design, implementation, and evaluation issues of wireless Internet telephony. Y. Lee and I.F. Akyildiz present a new scheme to reduce the link and signaling costs in Mobile IP. The paper by P. McKinley, U.I. Padmanabhan, N. Ancha, and S.M. Sadjadi describes a composable proxy infrastructure that enables mobile Internet users to collaborate via heterogeneous devices and network connections. V.A. Chitre and J.N. Daigle present an analytical model to assess GPRS's capability of supporting IP-based Internet services. Performance optimization of VoIP calls over wireless links using H.323 protocol is proposed by S.K. Das, E. Lee, K. Basu, and S.K. Sen.

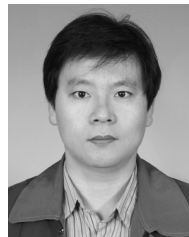
The next set of three papers covers issues related to wireless LANs and sensor networks. The important coverage issue concerning the deployment of sensors in a wireless ad hoc sensor network is addressed in the first paper by X.-Y. Li, P.-J. Wan, and O. Frieder. A polling mechanism to support QoS in IEEE 802.11 wireless LANs is proposed by S.-C. Lo, G. Lee, and W.-T. Chen. Formation of scatternets for Blue-

tooth-based wireless networks is discussed in the paper by C. Petrioli, S. Basagni, and I. Chlamtac.

The last set of two papers covers management issues in mobile networks. An analysis for movement-based mobility management in mobile networks is discussed in the first paper by Y. Fang, who makes a thorough numerical analysis for finding the optimal mobility management under various network operation scenarios possible. Admission control for scheduling bursty traffic in CDMA systems is discussed in the paper by Y.-K. Kwok and V.K.N. Lau, where six efficient rate allocation schemes are proposed.

Finally, we would like to take the opportunity to thank the contributing authors, reviewers, the Area Editor, Dr. S.L. Min, and the Editor-in-Chief, Professor J.-L. Gaudiot. Without their support, this special section would not be possible.

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Yi-Bing Lin received the BSEE degree from National Cheng Kung University in 1983 and the PhD degree in computer science from the University of Washington in 1990. From 1990 to 1995, he was with the Applied Research Area at Bell Communications Research (Bellcore), Morristown, New Jersey. In 1995, he was appointed a professor of Department of Computer Science and Information Engineering (CSIE), National Chiao Tung University (NCTU). In 1996, he was appointed deputy director of the Microelectronics and Information Systems Research Center, NCTU. During 1997-1999, he was elected chairman of CSIE, NCTU. His current research interests include design and analysis of personal communications services network, mobile computing, distributed simulation, and performance modeling. He has published more than 150 journal articles and more than 200 conference papers. He is the coauthor (with Imrich Chlamtac) of the book *Wireless and Mobile Network Architecture* (John Wiley & Sons). He is an adjunct research fellow of Academia Sinica. He is a fellow of the IEEE.



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