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## TOPICS IN INTERNET TECHNOLOGY

The fourth generation (4G) of wireless communications is expected to integrate a potentially large number of heterogeneous wireless technologies in what could be considered a huge step forward toward universal seamless access. One of the main challenges for seamless mobility is the availability of reliable horizontal (intrasystem) and vertical (intersystem) handoff schemes. Efficient handoff schemes enhance the quality of service (QoS) and provide flawless mobility. In the first article, N. Nasser, A. Hasswa, and H. Hassanein present different and novel aspects of handoff and discusses handoff related issues of 4G systems. Desirable handoff features in 4G heterogeneous networks are presented. They also consider handoff decisions, radio link transfer, and channel assignment as stages of the complete handoff process. A vertical handoff decision function, VHDF, which enables devices to assign weights to different network parameters, is also presented.

The second article discusses minimum interference routing with fast protection; it is by E. Calle, A. Urra, J. Marzo, G. S. Kuo, and H. B. Guo. Different aspects of this routing technique are reviewed and analyzed and a new proposal combining minimum interference with fast protection using shared segment backups is introduced. It is known that one of the most effective techniques offering QoS routing is minimum interference routing. However, it is complex in terms of computation time and not oriented toward improving the network protection level. In order to include better levels of protection, new minimum interference routing algorithms are necessary. Minimizing the failure recovery time is also a complex process involving different failure recovery phases. The authors show through results that their proposed method improves both the minimization of the request rejection ratio and the percentage of bandwidth allocated to backup paths in networks with low and medium protection requirements.

The third article, by D. H. Sadok, C. Kamienski, and J. Kelner, discusses self composing networks that allow dynamic configuration of networks for creation of new types of networks. As examples of dynamically configurable networks, they discuss universal plug and play networks and ambient networks. The authors present a policy-based management framework for ambient networks based on peer-to-peer networks, and identify routing as the biggest challenge in these dynamically configurable networks.

This time, 12 papers were submitted for possible publication in this issue. After a rigorous review process, only three papers were accepted for publication. This series is published in May and October every year. The series deals with survey and tutorial papers on current research issues relating to

Internet technology. Over the years, there has been a steady increase in the number of submissions to this series, indicating a strong interest in this topic among our readers.

The quality of this series depends on the quality of papers and the stringent refereeing carried out by a large number of volunteers. We would like to thank the authors and reviewers for their time and dedication to this series. We also invite potential authors to continue submitting high-quality papers to this series.

We would like to acknowledge the help of the Editor-in-Chief, Tom Chen, and Joe Milizzo and Sue Lange of the IEEE publications staff for helping with the production of this series. We welcome any comments you may have to further improve the quality of the papers published in this series.

### BIOGRAPHIES

MOHSEN GUIZANI [SM] (mguizani@cs.wmich.edu) is currently a professor and chair of the Computer Science Department at Western Michigan University. He received his B.S. (with distinction) and M.S. degrees in electrical engineering, and M.S. and Ph.D. degrees in computer engineering in 1984, 1986, 1987, and 1990, respectively, from Syracuse University, New York. His research interests include computer networks, wireless communications and computing, and optical networking. He currently serves on the editorial boards of six technical journals, and is Founder and Editor-in-Chief of *Wireless Communications and Mobile Computing Journal* (<http://www.interscience.wiley.com/jpages/1530-8669/>). He is the author of three books and in the process of writing another two. He has guest edited a number of special issues in journals and magazines. He has also served as member, Chair, and General Chair of a number of conferences, including ICC, GLOBECOM, INFOCOM, and many others. He has more than 130 publications in refereed journals and conferences. He was selected as a Distinguished Speaker for IEEE Computer Society until 2005. He is a member of IEEE Computer Society, ASEE, ACM, OSA, SCS, and Tau Beta Pi.

MOHAMMED ATIQUZZAMAN [SM] (atiq@ou.edu) received M.Sc. and Ph.D. degrees in electrical engineering from the University of Manchester, England. Currently he is a professor in the School of Computer Science at the University of Oklahoma. He is Co-Editor-in-Chief of *Computer Communications Journal*, and serves on the editorial boards of *IEEE Communications Magazine*, *Telecommunications Systems Journal*, *Wireless and Optical Networks Journal*, and *Real Time Imaging Journal*. He has guest edited many special issues in various journals, and organized special sessions at conferences. He was technical co-chair of the 2003 Workshop on High Performance Switching and Routing, and the SPIE Quality of Service over Next-Generation Data Networks Conference (2001, 2002, 2003). He also serves on the technical program committees of many national and international conferences, including IEEE INFOCOM, IEEE GLOBECOM, and IEEE International Conference on Computers and Communication Networks. His current research interests are in wireless, satellite, and mobile networks, quality of service for next-generation Internet, broadband networks, multimedia over high-speed networks, TCP/IP over ATM, multiprocessor systems, and image processing. He is co-author of the book *TCP/IP over ATM Networks*.