Editorial

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Biographical notes: Malik Audeh received his BS in Electrical Engineering from the University of Illinois at Urbana-Champaign in 1990, and his MS and PhD degrees from the University of California at Berkeley in 1992 and 1995 respectively. He is currently a Principal Consultant at Itron, Inc., working in the area of automated metering infrastructure. Previously, he has worked in the areas of system design, standardisation, and deployment of indoor/outdoor Wi-Fi and WiMAX. He is a voting member of the IEEE 802.11 working group.

Eli V. Olinick is an Associate Professor in the Department of Engineering Management, Information and Systems at Southern Methodist University. He completed his BS in Applied Mathematics at Brown University and earned his MS and PhD in Industrial Engineering and Operations Research at the University of California at Berkeley in 1994 and 1999, respectively. His research interests are in applied optimisation – especially network design problems. He is the Vice Chair/Chair Elect of the INFORMS Technical Section on Telecommunications.

Dinesh Rajan received his BTech degree in Electrical Engineering from Indian Institute of Technology (IIT), Madras in 1997. He received his MS and PhD degrees in Electrical and Computer Engineering in 1999 and 2002, respectively, from Rice University, Houston, Texas. He joined the Electrical Engineering Department at Southern Methodist University, Dallas, Texas in August 2002, where he is currently an Associate Professor. His current research interests include communications theory, wireless networks, information theory and computational imaging. He received an NSF CAREER award in 2006 for his work on applying information theory to the design of mobile wireless networks.

The past two decades have seen a tremendous growth in the deployment and use of wireless networks. The current generation wireless systems can provide mobile users with high-speed data services at rates substantially higher than those of the previous generation. As a result the demand for mobile information services with high reliability, fast response times and ubiquitous connectivity continues to increase rapidly. The optimisation of system performance has become critically important both in terms of practical utility and commercial viability, and presents a rich area for research. For this special issue, we invited authors to submit papers addressing topics in optimisation modelling for design, analysis, and management of wireless networks, such as cellular and wireless LAN, and the services they deliver. We wish to thank all the authors who responded to our invitation for their contributions as well as the industry and academic experts who served as referees.

Konak proposes a geostatistical technique called kriging to reduce the labour-intensive process of measuring coverage in a wireless network – a task made famous

(or perhaps infamous) by a series of commercials for a major US mobile service provider. The proposed kriging model is compared against a previously published prediction model, based on training an artificial neural network on a series of test problem from the literature. The kriging model produced significantly better predictions than the ANN for all problem instances.

In the paper by Kumar et al. efficient resource allocation methods for OFDMA systems are studied. The authors also consider different classes of multimedia traffic and wide signal-to-noise ratios jointly in their analysis and quantify the advantages and accuracy of their approach.

The paper by Prathap and Vasudevan covers the area of pay-per-view and pay-per-channel using conditional access systems. They address the dynamic membership of the viewing group and maintaining effective usage of system resources when multiple programs are being viewed. Key distribution schemes are proposed and analysed in different conditions.