

Guest Editorial

Wireless networks to provide Personal Communication Services (PCS) is one of the fastest growing segments in the information and telecommunication industry today. In addition to having stand alone applications such as wireless LANs, wireless networks will be the essential doorways for mobile users accessing high speed network services. Successful delivery of PCS will entail an appropriate combination of wireless and wireline networks. Wireless networks, here, include cellular, cordless, pagers, satellite, and air-to-ground; and wireline includes public and private, data and phone networks with their anticipated movement to ATM technology and B-ISDN.

High performance of future wireless networks is critical to the success of PCS. Wireless performance must try to match that of wireline in terms of maintaining high call quality and low call blocking, as well as in facilitating different QoSs to different users.

This performance has to be realized with limited radio spectrum and over harsh wireless channels, via effective RF communication subsystems, architecture, protocols and signaling, cell design, and mobility and resource management techniques.

This Special Issue of the Journal of High Speed Networks brings six articles on some key aspects of performance and design of wireless networks. All articles were reviewed by at least two reviewers.

The first three articles address resource allocation to achieve self-configurability and better traffic capacity. The invited article by Walrand and Preneel analyses the convergence and performance of quasi-static, adaptive frequency allocation algorithms. Jordan's invited article surveys recent research on a class of resource allocation techniques for wireless networks. The paper by Wijesinha *et al.* provides a complete theoretical analysis of allocating a single channel in finite and infinite linear cell arrays, comparing fixed and dynamic schemes.

The paper by Nagshineh and Acampora addresses the micro-cellular design and control issues arising when real-time connections have to be supported with specified QoS. The invited article by Ramseier and Ephremides analyses admission control issues in spot-beam satellite networks. The invited paper by Ahmadi *et al.* provides a critical and timely survey of a broad spectrum of issues in wireless LAN design.

I thank the authors and reviewers for the time and effort they have put into this Special Issue.

Finally, the future issues of the Journal of High Speed Networks will bring more invited and contributed articles in this rapidly growing area of wireless and PCS.

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