

## Foreword

Wireless networks have been rapidly expanded in business and home environments making the wireless market a huge market. PDAs are widely spread, mobile phones with computer capabilities are almost everywhere and laptops with wireless connections are selling in great numbers. Wireless networks allow somebody to stay connected and be productive no matter where he is. Driven by the mobility of society, convenience and ease of use of wireless products, users require the elimination of distinction between services offered from wireless and wireline networks. Interactive applications such as IP telephony, streaming video, interactive video games and video telephony have become very popular and pose certain tight constraints at the underline network.

Wireless communication poses new challenges in Wireless Network design. Efficient Medium Access techniques, transmission errors at the wireless medium, variable bit rate adjusting to wireless medium conditions, connection to the most suitable base station as the mobile user moves around, energy saving techniques due to limited battery power of mobile devices, best path selection in multi-hop mesh networks and admission control of new stations are some of the critical issues that should be addressed in efficient Network Design. These new and challenging problems of mobile and wireless network design, combined with the tight constraints and QoS required by interactive applications is a new fruitful area of research.

In short, this book is a valuable reference to researchers and developers in the fields of wireless network design considering quality of service support; in addition, it will be very useful for new entrants in this field as it includes contributions in the most interesting research topics in the field of providing interactive applications the required Quality of Service support in modern wireless networks. The variety of topics discussed in this book makes it o valuable reference to active researchers. This book presents to the wireless network community the current research trends for efficient MAC design to provide QoS in wireless networks and inspire future research in this area.

*Vasileios Vitsas*

*Technological Educational Institution of Thessaloniki, Greece*

**Vasileios Vitsas**, B.Sc Electrical Engineering (Aristotelian University of Thessaloniki, GR), M.Sc. Computer Science, (University of California, Santa Barbara, USA), Ph.D. Wireless Communications (Bournemouth University, UK), is a professor in Computer Networks at the Information Technology Department at Technological Educational Institution of Thessaloniki, Greece. He has worked for several years as a Senior Telecommunications Engineer at the Greek Telecommunications Organization (OTE). Vasileios has served as Head of Department and Head of Division at the Information Technology Department at Technological Educational Institution of Thessaloniki. His current research interests lie in wireless and multimedia communications. Vasileios has served as Chair, Technical Program Committee member and Referee for several international IEEE journals, conferences and workshops.