Multiaccess, Mobility and Teletraffic in Wireless Communications: Volume 4

Multiaccess, Mobility and Teletraffic in Wireless Communications: Volume 4

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Preface

The unrelenting growth of wireless communications continues to raise new research and development problems that require unprecedented interactions among communication engineers. In particular, specialists in transmission and specialists in networks must often cross each other's boundaries. This is especially true for CDMA, an access technique that is being widely accepted as a system solution for next-generation mobile cellular systems, but it extends to other system aspects as well. Major challenges lie ahead, from the design of physical and radio access to network architecture, resource management, mobility management, and capacity and performance aspects.

Several of these aspects are addressed in this volume, the fourth in the edited series on Multiaccess, Mobility and Teletraffic for Wireless Communications. It contains papers selected from MMT'99, the fifth Workshop held on these topics in October 1999 in Venezia, Italy. The focus of this workshop series is on identifying, presenting, and discussing the theoretical and implementation issues critical to the design of wireless communication networks. More specifically, these issues are examined from the viewpoint of the impact each one of them can have on the others.

Specific emphasis is given to the evolutionary trends of universal wireless access and software radio. Performance improvements achieved by spectrally efficient codes and smart antennas in experimental GSM testbeds are presented. Several contributions address critical issues regarding multimedia services for Third-Generation Mobile Radio Networks ranging from high rate data transmission with CDMA technology to resource allocation for integrated Voice/WWW traffic. Network architectures are proposed for efficient mobility management in an Internet based mobile wireless network and for route optimization for hand-off connections in wireless ATM. Finally, the increasing interest for global personal communications is reflected in a few papers addressing the efficiency of mobility and multiple access in Low Earth Orbit Mobile Satellite Systems.

Our hope is that the material presented in this volume will help stimulate many ideas for future research.

Ezio Biglieri
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