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Nota di contenuto	WIRELESS INFORMATION NETWORKS; CONTENTS; Preface; PART I INTRODUCTION TO WIRELESS NETWORKS; 1 Overview of Wireless Networks; 1.1 Introduction; 1.2 Network Architecture and Design Issues; 1.3 Key Trends in Wireless Networking; 1.4 Outline of the Book; Questions; 2 Evolution of the Wireless Industry; 2.1 Introduction; 2.2 Three Views of the Wireless Industry; 2.3 Three Generations of Cellular Networks; 2.4 Trends in Wireless Technologies; Questions; PART II CHARACTERISTICS OF RADIO PROPAGATION; 3 Characterization of Radio Propagation; 3.1 Introduction 3.2 Multipath Fading and the Distance-Power Relationship3.3 Local Movements and Doppler Shift; 3.4 Multipath for Wideband Signals; 3.5 Classical Uncorrelated Scattering Model; 3.6 Indoor and Urban Radio Propagation Modeling; Questions; Problems; Projects; 4 Modeling and Simulation of Narrowband Signal Characteristics; 4.1 Introduction; 4.2 Modeling Path Loss and Slow Shadow Fading; 4.3 Doppler Spectrum of

Fast Envelope Fading; 4.4 Statistical Behavior of Fast Envelope Fading; 4.5 Simulation of Fast Envelope Fading; Questions; Problems; Projects 5 Measurement of Wideband and UWB Channel Characteristics5.1 Introduction; 5.2 Time-Domain Measurement Techniques; 5.3 Frequency-Domain Measurement Techniques; 5.4 Advances in Frequency-Domain Channel Measurement; Questions; Problems; Project; 6 Modeling of Wideband Radio Channel Characteristics; 6.1 Introduction; 6.2 Wideband Time-Domain Statistical Modeling; 6.3 Wideband Frequency-Domain Channel Modeling; 6.4 Comparison Between Statistical Models; 6.5 Ray-Tracing Algorithms; 6.6 Direct Solution of Radio Propagation Equations; 6.7 Comparison of Deterministic and Statistical Modeling 6.8 Site-Specific Statistical ModelAppendix 6A: GSM-Recommended Multipath Propagation Models; Appendix 6B: Wideband Multipath Propagation Models; Questions; Problems; Projects; PART III MODEM DESIGN; 7 Narrowband Modem Technology; 7.1 Introduction; 7.2 Basic Modulation Techniques; 7.3 Theoretical Limits and Practical Impairments; 7.4 Traditional Modems for Wide-Area Wireless Networks; 7.5 Other Aspects of Modem Implementation; Questions; Problems; Projects; 8 Fading, Diversity, and Coding; 8.1 Introduction; 8.2 Radio Communication on Flat Rayleigh Fading Channels; 8.3 Diversity Combining 8.4 Error-Control Coding for Wireless Channels8.5 Space-Time Coding; 8.6 MIMO and STC; Questions; Problems; Projects; 9 Broadband Modem Technologies; 9.1 Introduction; 9.2 Effects of Frequency-Selective Multipath Fading; 9.3 Discrete Multipath Fading Channel Model; 9.4 Adaptive Discrete Matched Filter; 9.5 Adaptive Equalization; 9.6 Sectorized Antennas; 9.7 Multicarrier, OFDM, and Frequency Diversity; 9.8 Comparison of Traditional Broadband Modems; 9.9 MIMO in Frequency-Selective Fading; Appendix 9A: Analysis of the Equalizers; Questions; Problems; Projects 10 Spread-Spectrum and CDMA Technology

## Sommario/riassunto

Towards location aware mobile ad hoc sensorsA Systems Engineering Approach to Wireless Information NetworksThe Second Edition of this internationally respected textbook brings readers fully up to date with the myriad of developments in wireless communications. When first published in 1995, wireless communications was synonymous with cellular telephones. Now wireless information networks are the most important technology in all branches of telecommunications. Readers can learn about the latest applications in such areas as ad hoc sensor networks, home networking, and wireless po