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Nota di contenuto	Next Generation Wireless Systems and Networks; Contents; Preface; About the Authors; 1 Introduction; 1.1 Part I: Background Knowledge; 1.2 Part II: 3G Mobile Cellular Standards; 1.3 Part III: Wireless Networking; 1.4 Part IV: B3G and Emerging Wireless Technologies; 1.5 Suggestions for Using This Book; 2 Fundamentals of Wireless Communications; 2.1 Theory of Radio Communication Channels; 2.1.1 Radio Signal Propagation; 2.1.2 Fading Channel Models; 2.1.3 Narrowband and Frequency-Domain Characteristics; 2.1.4 Wideband and Time-Domain Characteristics; 2.2 Spread Spectrum Techniques 2.2.1 Direct-Sequence Spread Spectrum Techniques2.2.2 Frequency Hopping Spread Spectrum Techniques; 2.2.3 Time Hopping Spread Spectrum and Ultra-Wideband Techniques; 2.3 Multiple Access

Technologies; 2.3.1 Frequency Division Multiple Access; 2.3.2 Time Division Multiple Access; 2.3.3 Code Division Multiple Access; 2.3.4 Random Multiple Access Technologies; 2.4 Multiple User Signal Processing; 2.4.1 Multiuser Joint Detection against MAI; 2.4.2 Pilot-Aided CDMA Signal Detection; 2.4.3 Beam-Forming against Co-Channel Interference; 2.5 OSI Reference Model; 2.6 Switching Techniques 2.6.1 Circuit Switching Networks 2.6.2 Packet Switching Networks; 2.7 IP-Based Networking; 3 3G Mobile Cellular Technologies; 3.1 CDMA2000; 3.1.1 Operational Advantages; 3.1.2 General Architecture; 3.1.3 Airlink Design; 3.1.4 Data Throughput; 3.1.5 Turbo Coding; 3.1.6 Forward Link; 3.1.7 Scheduling; 3.1.8 Reverse Link; 3.1.9 CDMA2000 1xEV Signaling; 3.1.10 Handoffs; 3.1.11 Summary of CDMA2000 1xEV; 3.1.12 CDMA2000 1xEV-DO; 3.1.13 CDMA2000 1xEV-DV; 3.2 WCDMA; 3.2.1 History of UMTS WCDMA; 3.2.2 ETSI UMTS versus ARIB WCDMA; 3.2.3 UMTS Cell and Network Structure; 3.2.4 UMTS Radio Interface 3.2.5 UMTS Protocol Stack 3.2.6 UTRA Channels; 3.2.7 UTRA Multiplexing and Frame Structure; 3.2.8 Spreading and Carrier Modulations; 3.2.9 Packet Data; 3.2.10 Power Control; 3.2.11 Handovers; 3.3 TD-SCDMA; 3.3.1 Historical Background; 3.3.2 Overview of TD-SCDMA; 3.3.3 Frame Structure; 3.3.4 Smart Antenna; 3.3.5 Adaptive Beam Patterns; 3.3.6 Up-Link Synchronization Control; 3.3.7 Intercell Synchronization; 3.3.8 Baton Handover; 3.3.9 Intercell Dynamic Channel Allocation; 3.3.10 Flexibility in Network Deployment; 3.3.11 Technical Limitations of TD-SCDMA; 3.3.12 Global Impact of TD-SCDMA

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Sommario/riassunto

Next Generation Wireless Systems and Networks offers an expert view of cutting edge Beyond 3rd Generation (B3G) wireless applications. This self-contained reference combines the basics of wireless communications, such as 3G wireless standards, spread spectrum and CDMA systems, with a more advanced level research-oriented approach to B3G communications, eliminating the need to refer to other material. This book will provide readers with the most up-to-date technological developments in wireless communication systems/networks and introduces the major 3G standards, such as W-C
