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| Altri autori (Persone)  | DahlmanErik   |
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| Nota di contenuto       | Front Cover; 3G Evolution: HSPA and LTE for Mobile Broadband; Copyright Page; Contents; List of Figures; List of Tables; Preface; Acknowledgements; List of Acronyms; Part I: Introduction; Chapter 1 Background of 3G evolution; 1.1 History and background of 3G; 1.2 Standardization; 1.3 Spectrum for 3G; Chapter 2 The motives behind the 3G evolution; 2.1 Driving forces; 2.2 3G evolution: two Radio Access Network approaches and an evolved core network; Part II: Technologies for 3G Evolution; Chapter 3 High data rates in mobile communication; 3.1 High data rates: fundamental constraints 3.2 Higher data rates within a limited bandwidth: higher-order modulation3.3 Wider bandwidth including multi-carrier transmission; Chapter 4 OFDM transmission; 4.1 Basic principles of OFDM; 4.2 OFDM demodulation; 4.3 OFDM implementation using IFFT/FFT processing; 4.4 Cyclic-prefix insertion; 4.5 Frequency-domain model of OFDM transmission; 4.6 Channel estimation and reference symbols; 4.7 Frequency diversity with OFDM: importance of channel coding; 4.8 Selection of basic OFDM parameters; 4.9 Variations in instantaneous transmission power 4.10 OFDM as a user-multiplexing and multiple-access scheme4.11 |

Multi-cell broadcast/multicast transmission and OFDM; Chapter 5 Wider-band 'single-carrier' transmission; 5.1 Equalization against radio-channel frequency selectivity; 5.2 Uplink FDMA with flexible bandwidth assignment; 5.3 DFT-spread OFDM; Chapter 6 Multi-antenna techniques; 6.1 Multi-antenna configurations; 6.2 Benefits of multi-antenna techniques; 6.3 Multiple receive antennas; 6.4 Multiple transmit antennas; 6.5 Spatial multiplexing; Chapter 7 Scheduling, link adaptation and hybrid ARQ  
7.1 Link adaptation: Power and rate control; 7.2 Channel-dependent scheduling; 7.3 Advanced retransmission schemes; 7.4 Hybrid ARQ with soft combining; Part III: HSPA; Chapter 8 WCDMA evolution: HSPA and MBMS; 8.1 WCDMA: brief overview; Chapter 9 High-Speed Downlink Packet Access; 9.1 Overview; 9.2 Details of HSDPA; 9.3 Finer details of HSDPA; Chapter 10 Enhanced Uplink; 10.1 Overview; 10.2 Details of Enhanced Uplink; 10.3 Finer details of Enhanced Uplink; Chapter 11 MBMS: multimedia broadcast multicast services; 11.1 Overview; 11.2 Details of MBMS; Chapter 12 HSPA Evolution; 12.1 MIMO; 12.2 Higher-order modulation; 12.3 Continuous packet connectivity; 12.4 Enhanced CELL\_FACH operation; 12.5 Layer 2 protocol enhancements; 12.6 Advanced receivers; 12.7 Conclusion; Part IV: LTE and SAE; Chapter 13 LTE and SAE: introduction and design targets; 13.1 LTE design targets; 13.2 SAE design targets; Chapter 14 LTE radio access: an overview; 14.1 Transmission schemes: downlink OFDM and uplink SC-FDMA; 14.2 Channel-dependent scheduling and rate adaptation; 14.3 Hybrid ARQ with soft combining; 14.4 Multiple antenna support; 14.5 Multicast and broadcast support; 14.6 Spectrum flexibility  
Chapter 15 LTE radio interface architecture

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## Sommario/riassunto

This very up-to-date and practical book, written by engineers working closely in 3GPP, gives insight into the newest technologies and standards adopted by 3GPP, with detailed explanations of the specific solutions chosen and their implementation in HSPA and LTE. The key technologies presented include multi-carrier transmission, advanced single-carrier transmission, advanced receivers, OFDM, MIMO and adaptive antenna solutions, advanced radio resource management and protocols, and different radio network architectures. Their role and use in the context of mobile broadband access in gen

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