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2.5. Bearer services offered by UMTS networks 2.6. UMTS protocol architecture based on "stratum" concept; 2.6.1. Access stratum; 2.6.2. Non-access stratum; Chapter 3. Services in UMTS; 3.1. Introduction; 3.2. UMTS mobile terminals; 3.2.1. UE functional description; 3.2.2. UE maximum output power; 3.2.3. Dual-mode GSM/UMTS terminals; 3.2.4. UE radio access capability; 3.3. Services offered by UMTS networks; 3.3.1. Standard UMTS telecommunication services; 3.3.2. UMTS bearer services; 3.3.3. Teleservices; 3.3.4. Supplementary services; 3.3.5. Operator specific services: service capabilities 3.3.6. The virtual home environment 3.4. Traffic classes of UMTS bearer services; 3.4.1. Conversational services; 3.4.2. Streaming services; 3.4.3. Interactive services; 3.4.4. Background services; 3.5. Service continuity across GSM and UMTS networks; Chapter 4. UMTS Core Network; 4.1. Introduction; 4.2. UMTS core network architecture; 4.2.1. Main features of UMTS core network based on Release 99; 4.2.2. Circuit-switched and packet-switched domains; 4.3. Network elements and protocols of the CS and PS domains; 4.3.1. Network elements of the CS domain 4.3.2. Protocol architecture in the CS domain 4.3.3. Network elements of the PS domain; 4.3.4. Protocol architecture in the PS domain; 4.3.5. Integrated UMTS core network; 4.4. Network elements not included in UMTS reference architecture; 4.5. Interoperability between UMTS and GSM core networks; Chapter 5. Spread Spectrum and WCDMA; 5.1. Introduction; 5.2. Spread spectrum principles; 5.2.1. Processing gain; 5.2.2. Advantages of spread spectrum; 5.3. Direct sequence CDMA; 5.4. Multiple access based on spread spectrum; 5.5. Maximum capacity of CDMA 5.5.1. Effect of background noise and interference

Sommario/riassunto

During the first decade of this new millennium, it is estimated that more than €100 billion will be invested in the third generation (3G) Universal Mobile Telecommunications System (UMTS) in Europe. This fact represents an amazing challenge from both a technical and commercial perspective. Written by experts in the field, this book gives a detailed description of the elements in the UMTS network architecture: the User Equipment (UE), the UMTS Radio Access Network (UTRAN) and the core network. The completely new protocols based on the needs of the new Wideband Code Division Multiple Access (WCD
