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operation; 1.2.5. TDD LTE frequency band allocations; 1.3. LTE UE category and class definitions; 1.3.1. LTE UE category rationale; 1.3.2. LTE UE category definitions; 1.4. Interferences in OFDMA; 1.5. Radio propagation software; 1.6. Macrocells, microcells and femtocells; 1.6.1. Macrocells; 1.6.2. Femtocells; 1.6.3. Remote radio heads
1.6.4. Heterogeneous network1.7. Backhaul; 1.7.1. The unified backhaul; 1.7.2. Future of Ethernet backhaul; 1.7.3. UMTS IP NodeB transport over converged packet network; 1.7.3.1. Layer 2 VPN deployment model; 1.7.3.2. Layer 3 MPLS VPN deployment model; 1.7.3.3. IP NodeB deployment; 1.7.4. LTE/EPC transport over converged packet network; 1.7.4.1. LTE factors for consideration with underlying transport network; 1.7.4.1.1. Flattened mobile architecture; 1.7.4.1.2. X2 interface; 1.7.4.1.3. Distributed architecture; 1.7.4.1.4. Traffic types; 1.7.4.1.5. Network security and authentication
1.7.4.1.6. IPsec requirements1.7.4.1.7. IPv6 requirements; 1.7.4.1.8. QoS requirements; 1.7.4.1.9. Multicast requirement; 1.7.4.1.10. Synchronization requirements; 1.7.4.1.11. Network convergence; 1.7.4.1.12. RAN sharing; 1.7.4.1.13. Fault isolation/identification and fast convergence triggering; 1.7.4.1.14. Latency requirements; 1.7.4.1.15. Traffic separation and IP addressing models at the eNode; 1.7.4.2. Backhaul technology for an LTE-based converged packet network; 1.7.4.2.1. Layer 3/MPLS VPN model for LTE/EPC deployments; 1.7.4.2.2. Layer 2 VPN model for LTE/EPC deployments
1.7.4.2.3. LTE/EPC transport conclusions

Sommario/riassunto

LTE (Long Term Evolution) is commonly marketed as 4G. LTE and LTE Advanced have been recognized by ITU-R and ITU-T (International Telecommunications Union - Telecommunications) as the principal solution for the future mobile communication networks standards. They are thus the framework of what the marketing calls 4G and possibly also 5G. This book describes various aspects of LTE as well as the change of paradigm, which it is bringing to mobile communications, focusing on LTE standards and architecture, OFDMA, the Full IP Core Network and LTE security.