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3.4.3 5G Roadmaps3.5 Spectrum Usage Aspects at High Frequencies; 3.5.1 Propagation Challenges; 3.5.2 Beamforming and 5G Mobile Coverage; 3.5.3 Analysis of Deployment Scenarios; 3.5.4 Coexistence of 5G Systems and Fixed Service Links; 3.5.5 Coexistence under License-exempt Operation; 3.6 Spectrum Management; 3.6.1 Evolutions in Dynamic Spectrum Management; 3.6.2 Functional Spectrum Management Architecture; 3.7 Summary and Outlook; References; Chapter 4 Channel Modeling; 4.1 Introduction; 4.2 Core Features of New Channel Models; 4.2.1 Path Loss; 4.2.2 LOS Probability; 4.2.3 O2I Penetration Loss.
4.2.4 Fast Fading Generation4.3 Additional Features of New Channel Models; 4.3.1 Large Bandwidths and Large Antenna Arrays; 4.3.2 Spatial Consistency; 4.3.3 Blockage; 4.3.4 Correlation Modeling for Multi-Frequency Simulations; 4.3.5 Ground Reflection; 4.3.6 Diffuse Scattering; 4.3.7 D2D, Mobility, and V2V Channels; 4.3.8 Oxygen Absorption, Time-varying Doppler Shift, Multi-Frequency Simulations, and UE Rotation; 4.3.9 Map-based Hybrid Modeling Approach; 4.4 Summary and Outlook; References; Part 2 5G System Architecture and E2E Enablers; Chapter 5 E2E Architecture; 5.1 Introduction.

Sommario/riassunto

This book provides a comprehensive overview of the latest research and standardization progress towards the 5th generation (5G) of mobile communications technology and beyond. It covers a wide range of topics from 5G use cases and their requirements, to spectrum, 5G end-to-end (E2E) system architecture including core network (CN), transport network (TN) and radio access network (RAN) architecture, network slicing, security and network management. It further dives into the detailed functional design and the evaluation of different 5G concepts, and provides details on planned trials and pre-commercial deployments across the globe. While the book naturally captures the latest agreements in 3rd Generation Partnership Project (3GPP) New Radio (NR) Release 15, it goes significantly beyond this by describing the likely developments towards the final 5G system that will ultimately utilize a wide range of spectrum bands, address all envisioned 5G use cases, and meet or exceed the International Mobile Telecommunications (IMT) requirements for the year 2020 and beyond (IMT-2020). 5G System Design: Architectural and Functional Considerations and Long Term Research> is based on the knowledge and consensus from 158 leading researchers and standardization experts from 54 companies or institutes around the globe, representing key mobile network operators, network vendors, academic institutions and regional bodies for 5G. Different from earlier books on 5G, it does not focus on single 5G technology components, but describes the full 5G system design from E2E architecture to detailed functional design, including details on 5G performance, implementation and roll-out.</ '</ </ '</ </ '</ </ '</ </ '</ '<