

1. Record Nr.	UNINA9910526825503321
Titolo	5G for the connected world // edited by Devaki Chandramouli, Rainer Liebhart,, Juho Pirskanen, Kangasala, Finland
Pubbl/distr/stampa	Hoboken, New Jersey : , : John Wiley & Sons, Inc., , 2019 [Piscataqay, New Jersey] : , : IEEE Xplore, , [2019]
ISBN	1-119-24713-6 1-119-24707-1 1-119-24711-X
Edizione	[1st edition]
Descrizione fisica	1 online resource (516 pages)
Collana	THEi Wiley ebooks.
Disciplina	621.38456
Soggetti	Mobile communication systems - Technological innovations Broadband communication systems - Technological innovations Wireless sensor networks - Technological innovations
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover; Title Page; Copyright; Contents; About the Editors; List of Contributors; Foreword by Tommi Uitto; Foreword by Karri Kuoppamaki; Preface; Acknowledgements; Introduction; Terminology; Chapter 1 Drivers and Motivation for 5G; 1.1 Drivers for 5G; 1.2 ITU-R and IMT 2020 Vision; 1.3 NGMN (Next Generation Mobile Networks); 1.4 5GPPP (5G Public-Private Partnership); 1.5 Requirements for Support of Known and New Services; 1.5.1 Massive IoT; 1.5.2 Time Critical Communication; 1.5.3 Enhanced Mobile Broadband (eMBB); 1.5.4 Enhanced Vehicular Communications; 1.5.5 Network Operations 1.6 5G Use Cases1.6.1 5G to the Home; 1.6.2 In-Vehicle Infotainment; 1.6.3 Hot Spots; 1.6.4 Truck Platooning; 1.6.5 Connected Health Care; 1.6.6 Industry 4.0; 1.6.7 Megacities; 1.7 Business Models; 1.7.1 Asset Provider Role; 1.7.2 Connectivity Provider Role; 1.7.3 Partner Service Provider Role; 1.8 Deployment Strategies; 1.9 3GPP Role and Timelines; References; Chapter 2 Wireless Spectrum for 5G; 2.1 Current Spectrum for Mobile Communication; 2.2 Spectrum Considerations for 5G; 2.3 Identified New Spectrum; 2.4 Spectrum Regulations; 2.4.1 Licensed Spectrum; 2.4.2 License-Exempt Spectrum

2.4.3 New Regulatory Approaches 2.5 Characteristics of Spectrum Available for 5G; 2.5.1 Pathloss; 2.5.2 Multipath Propagation; 2.6 NR Bands Defined by 3GPP; References; Chapter 3 Radio Access Technology; 3.1 Evolution Toward 5G; 3.1.1 Introduction; 3.1.2 Pre-Standard Solutions; 3.2 Basic Building Blocks; 3.2.1 Waveforms for Downlink and Uplink; 3.2.2 Multiple Access; 3.2.3 5G Numerology and Frame Structures; 3.2.4 Bandwidth and Carrier Aggregation; 3.2.5 Massive MIMO (Massive Multiple Input Multiple Output); 3.2.6 Channel Coding; 3.2.6.1 Channel Coding for User Plane Data 3.2.6.2 Channel Coding for Physical Control Channels 3.3 Downlink Physical Layer; 3.3.1 Synchronization and Cell Detection; 3.3.1.1 Primary Synchronization Signal (PSS); 3.3.1.2 Secondary Synchronization Signal (SSS); 3.3.1.3 Physical Broadcast Channel (PBCH); 3.3.1.4 SS Block Burst Set; 3.3.2 System Information Broadcast (SIB); 3.3.2.1 Remaining Minimum System Information (RMSI); 3.3.2.2 Other System Information; 3.3.3 Downlink Data Transmission; 3.4 Uplink Physical Layer; 3.4.1 Random Access; 3.4.1.1 Long Sequence; 3.4.1.2 Short Sequence; 3.4.2 Uplink Data Transmission 3.4.3 Contention-Based Access 3.5 Radio Protocols; 3.5.1 Overall Radio Protocol Architecture; 3.5.2 Medium Access Control (MAC); 3.5.2.1 Logical Channels and Transport Channels; 3.5.2.2 MAC PDU Structures for Efficient Processing; 3.5.2.3 Procedures to Support UL Scheduling; 3.5.2.4 Discontinuous Reception and Transmission; 3.5.2.5 Random Access Procedure; 3.5.2.6 Beam Failure Management; 3.5.3 Radio Link Control (RLC); 3.5.3.1 Segmentation; 3.5.3.2 Error Correction Through ARQ; 3.5.3.3 Reduced RLC Functions for Efficient Processing; 3.5.4 Packet Data Convergence Protocol (PDCP)

Sommario/riassunto

"After the considerable success of LTE, why do we need a new system with a new radio and a new core? First, 5G will boost some of the LTE key performance indicators to a new horizon: capacity, latency, energy efficiency, spectral efficiency and reliability. We will describe the relevant radio and core features to enable optimizations (5G to be 10, 100 or 1000 times better than LTE) in these areas in respective chapters of the book"--
