

1. Record Nr.	UNINA9910580221803321
Titolo	New Directions in Geometric and Applied Knot Theory / / Philipp Reiter, Simon Blatt, Armin Schikorra, editors
Pubbl/distr/stampa	Berlin ; ; Boston : , : De Gruyter, , [2022] ©2022
Descrizione fisica	1 online resource (200 pages) : illustrations
Disciplina	518.25
Soggetti	Discrete mathematics Geometry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	The aim of this book is to present recent results in both theoretical and applied knot theory-which are at the same time stimulating for leading researchers in the field as well as accessible to non-experts. The book comprises recent research results while covering a wide range of different sub-disciplines, such as the young field of geometric knot theory, combinatorial knot theory, as well as applications in microbiology and theoretical physics.

2. Record Nr.	UNINA9910795797503321
Autore	Manner Jennifer A
Titolo	Spectrum Wars
Pubbl/distr/stampa	Norwood : , : Artech House, , 2021 ©2021
ISBN	1-63081-917-4
Descrizione fisica	1 online resource (217 pages)
Disciplina	384.54524
Soggetti	Radio frequency allocation Cell phone systems 5G mobile communication systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Spectrum Wars: The Rise of 5G and Beyond -- Contents -- Foreword -- Preface -- 1 Introduction: The Changing World of Spectrum -- 1.1 5G and Beyond Technologies: Their De -- 1.2 The Search for Access for Additional -- 1.2.1 Spectrum Availability Today -- 1.2.2 The Role of Technology -- 1.2.3 The Role of the Spectrum Management and Regulatory Processes -- 1.3 Next Steps -- References -- 2 The Evolving International Spectrum Regulatory Landscape -- 2.1 Overview of the ITU Spectrum Management Responsibilities -- 2.2 Overview of the International Table of Frequency Allocations and the WRC Process -- 2.3 ITU-R Leadership and Participation -- 2.4 The Negotiations -- 2.5 The Role of WRC and the Identification of Spectrum for IMT Enabling 5G -- 2.6 Thoughts for the Future -- References -- 3 The Evolving Domestic Spectrum Regulatory Landscape -- 3.1 Overview -- 3.2 The Structure of Domestic Spectrum Managers -- 3.3 Managing the Domestic Table of Frequency Allocations -- 3.4 Assigning Spectrum for Particular Uses -- 3.5 Domestic Licensing of Radio Services -- 3.6 The Role of Spectrum Harmonization and Its Importance in a 5G and Beyond World -- 3.7 Evolving Trends That Licensing Decisions in a 5G and Beyond World -- 3.7.1 Obtaining Public Policy Goals Through the Licensing Process -- 3.7.2 Limiting Incumbent Use to Enable 5G Use -- 3.7.3 Incentivizing Relocation of Incumbents -- 3.7.4 Relocation of

Government Users to Free up Spectrum for 5G -- 3.8 Conclusion -- References -- 4 5G Technology Overview -- 4.1 Terrestrial Mobile Wireless Services -- 4.1.1 Use of Low, Middle, and High Frequency Bands -- 4.1.2 Small Cells -- 4.1.3 Massive MIMO -- 4.2 Terrestrial Fixed Wireless Technologies -- 4.2.1 Wi-Fi -- 4.2.2 Fixed Terrestrial Wireless Services -- 4.3 Nonterrestrial Technologies -- 4.3.1 Satellite Networks.

4.4 High Altitude Platforms and Similar Technologies -- 4.5 Conclusion -- References -- 5 Drivers of Change, Use Cases Driving 5G, Future Challenges, and the Race to Be First -- 5.1 Overview -- 5.2 Drivers of Change -- 5.3 Use Cases Driving 5G -- 5.3.1 Healthcare -- 5.3.2 Multi-User Experience -- 5.3.3 Hyperconnectivity -- 5.3.4 Business and Industrial Needs -- 5.3.5 Smart Cities and Smart Infrastructure -- 5.3.6 Autonomous Technology -- 5.4 The Main 5G Technology Adoption Challenges -- 5.5 The Race to Be First -- References -- 6 Meeting the Growing Demand for Spectrum -- 6.1 Overview -- 6.2 The Changing World of Spectrum Sharing and Efficiency -- 6.2.1 Licensed Versus Unlicensed Spectrum -- 6.2.2 Dynamic Spectrum Access -- 6.3 Public Versus Private Networks -- 6.4 Hybrid Networks and Challenges -- 6.4.1 MSS with a Terrestrial Component -- 6.4.2 NGSO and Mobile Spectrum -- 6.4.3 True Hybrid Systems -- 6.5 The Need for a Three-Dimensional Spectrum Model -- 6.6 Conclusion -- References -- 7 Enabling the Use of Additional Spectrum for 5G -- 7.1 Introduction -- 7.2 Getting Spectrum Into the Hands of Operators -- 7.2.1 Secondary Markets and Use It or Lose It -- 7.2.2 The FCC's Secondary Markets Approach -- 7.2.3 Use It or Lose It -- 7.2.4 CBRS and Other Approaches -- 7.2.5 Incentive-Based Spectrum Management -- 7.3 Access to the 28 GHz Band for 5G Terrestrial Services -- 7.4 Accessing Higher Frequency Bands (Above 30 GHz) -- 7.5 Set-Asides for Industrial/Private Networks -- 7.6 Local Licensing -- 7.7 Increasing Access to Government Spectrum by Commercial Operators -- 7.8 Regional and Subregional Harmonization and Implementation of 5G Bands -- 7.9 The Challenges of Increased Use by Satellite Systems -- 7.9.1 Blanket Licensing of User Earth Stations -- 7.9.2 Assigning Spectrum to Meet Increased NGSO Demand.

7.10 Remaining Challenges in Implementing New Spectrum Management/Assignment Regimes to Accommodate 5G and Beyond -- References -- 8 6G and Beyond -- 8.1 Introduction: 6G Status and Challenges -- 8.2 What Does 6G Look Like and What Is the Likely Impact on Spectrum Management? -- 8.3 Regulators and Spectrum Managers Must Begin Planning to Meet 6G Spectrum Needs -- 8.3.1 Technology Neutral Decisions -- 8.3.2 The Need for Use of a Three-Dimensional Spectrum Model -- 8.3.3 Continued Challenges in Sharing and Making the Most Efficient Use of the Spectrum Resource -- 8.3.4 The THz Frequency Band -- 8.3.5 Greater Accountability for Use of Spectrum -- 8.4 Nonspectrum Solutions to Connectivity: Optical and Quantum -- 8.5 Conclusion -- References -- 9 Conclusion: Challenges Ahead -- 9.1 Introduction -- 9.2 Greater Spectrum Use -- 9.3 The Protection of Incumbent Uses -- 9.4 Making Additional Spectrum Available on a Technology Neutral Basis -- 9.5 Reducing Regulatory Burdens and Fees -- 9.6 Achieving Global Harmonization -- 9.7 Competition -- 9.8 Conclusion -- References -- Glossary -- About the Author -- Index.

---