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| Nota di contenuto | Cover Title Page Copyright Contents About the Editors List of Contributors Preface Abbreviations Chapter 1 Introduction: From Cognitive Radio to Modern Spectrum Sharing 1.1 A Brief History of Spectrum Sharing 1.2 Background 1.3 Book overview 1.4 Summary Chapter 2 Regulation and Standardization Activities Related to Spectrum Sharing 2.1 Introduction 2.2 Standardization 2.2.1 Licensed Shared Access 2.2.2 Evolved Licensed Shared Access 2.2.3 Citizen Broadband Radio System 2.2.4 CBRS Alliance 2.3 Regulation 2.3.1 European Conference of Postal and Telecommunications Administrations 2.3.2 Federal Communications Commission 2.3.3 A Comparison: (e)LSA vs CBRS Regulation Framework 2.3.4 Conclusion References Chapter 3 White Spaces and Database- assisted Spectrum Sharing 3.1 Introduction 3.2 Demand for Spectrum Outstrips Supply 3.2.1 Making Room for New Wireless Technology 3.2.2 Unused Spectrum 3.3 Three-tier Access Model 3.3.1 Secondary Users: Exploiting Gaps left by Primary Users 3.3.2 Passive Users: Vulnerable to Transmissions in White Space Frequencies |

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| | 3.3.3 Opportunistic Spectrum Users 3.4 What is Efficient Use of Spectrum? 3.4.1 Broadcasters prefer Large Coverage Areas with Lower Spectrum Reuse 3.4.2 ISPs Respond to Growing Bandwidth Demand from Subscribers 3.4.3 Protection of Primary Users Defines the Scope for Sharing 3.5 Tapping Unused Capacity: the Evolution of Spectrum Sharing 3.5.1 Traditional Coordination is a Slow and Expensive Process 3.5.2 License-exempt Access as the Default Spectrum Sharing Mechanism 3.5.3 DSA offers Lower Friction and more Scalability 3.5.3.1 Early days of DSA 3.5.3.2 CR: Towards Flexible, Adaptive, Ad Hoc Access 3.5.4 Spectrum Databases are Preferred by Regulators 3.6 Determining which Frequencies are Available to Share: Technology 3.6.1 CR: Its Original Sense 3.6.2 DSA is more Pragmatic and Immediately Applicable 3.6.3 Spectrum Sensing 3.6.3.1 Hidden Nodes: Limiting the Scope/Certainty of Sensing 3.6.3.2 Overcoming the Hidden Node Problem: a Cooperative Approach 3.6.4 Beacons 3.6.5 Spectrum Databases used with Device Geolocation 3.7 Implementing Flexible Spectrum Access 3.7.1 Software-defined Radio Underpins Flexibility 3.7.2 Regulation Needs to Adapt to the New Flexibility in Radio Devices 3.8 Foundations for More Flexible Access in the Future 3.8.1 Finer- grained Spectrum Access Management 3.8.2 More Flexible License Exemption 3.8.2.1 Towards a UHF Spectrum Commons or Superhighway References Further Reading Chapter 4 Evolving Spectrum Sharing Methods, Standards and Trials: TVWS, CBRS, MulteFire and More 4.1 Introduction 4.2 TV White Space 4.2.1 Overview 4.2.2 Operating Standards 4.2.3 Overview of TVWS Trials and Projects |
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| Sommario/riassunto | "The proposed book will provide a comprehensive treatment of the principles and architectures for spectrum sharing by expert authors from leading academia, industry and regulation authorities. The book starts with the historic form of cognitive radio, goes into current standardized forms of spectrum sharing, reviews all technical ingredients that may arise in spectrum sharing approaches, and finishes with policy and implementation aspects, and an outlook. Being the most recent book on the topic, it contains all the latest standardization trends, such as MulteFire, LTE-Unlicensed (LTE-U), LTE WLAN integration with Internet Protocol security tunnel (LWIP) and LTE/Wi-Fi aggregation (LWA) Includes substantial trials and experimental results, as well as system-level performance evaluation results. Contains a dedicated chapter on spectrum policy reinforcement and one on the economics of spectrum sharing by renowned MIT Professor William Lehr" |