1. Record Nr. UNINA9910143706903321

Autore	Walke Bernard H
Titolo	IEEE 802 wireless systems [[electronic resource]] : protocols, multi-hop mesh/relaying, performance and spectrum coexistence / / Bernard H. Walke, Stefan Mangold, [and] Lars Berlemann
Pubbl/distr/stampa	Chichester ; ; Hoboken, NJ, : John Wiley & Sons, c2006
ISBN	1-280-73995-9 9786610739950 0-470-05880-3 0-470-05879-X
Descrizione fisica	1 online resource (404 p.)
Altri autori (Persone)	MangoldStefan BerlemannLars
Disciplina	621.384
Soggetti	Wireless LANs IEEE 802.11 (Standard)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	IEEE 802 Wireless Systems; Contents; Preface; 1 Introduction; 1.1 Standardization; 1.2 Next-generation Systems; 1.3 The IEEE 802 Project; 1.4 Motivation and Outline; 2 Wireless Communication - Basics; 2.1 Radio Transmission Fundamentals; 2.1.1 Free-space Propagation; 2.1.2 Two-path Propagation Over Flat Terrain; 2.1.3 Attenuation; 2.1.4 Fading; 2.1.5 Shadowing; 2.1.6 Filtering and Transmit Spectrum Masks; 2.1.7 Propagation Models; 2.1.7.1 One-slope Model; 2.1.7.2 Hata-Okumura Model; 2.1.7.3 Walfish-Ikegami Model; 2.1.7.4 Dual-slope Model; 2.1.7.5 Berg Model 2.1.8 Signal-to-Interference Ratio (SIR)2.1.9 Noise - An Additional Source of Interference; 2.1.10 Signal to Interference and Noise Ratio (SINR); 2.1.11 Interference Range; 2.1.12 Digital Modulation; 2.1.13 Modulation and Coding of Radio Signals; 2.2 Duplexing Schemes; 2.2.1 Time Division Duplex; 2.2.2 Frequency Division Duplex; 2.3 Multiplexing; 2.3.1 Frequency Division Multiplex; 2.3.2 Time Division Multiplex; 2.3.3 Code Division Multiplex; 2.3.4 Space Division Multiplex; 2.3.5 Orthogonal Frequency Division Multiplex; 2.3.5.1 Pilot

Tones and Preambles
2.3.5.2 Fast Fourier Transformation (FFT)2.3.5.3 Cyclic Prefix; 2.4 Switching in Communication Networks; 2.4.1 Circuit Switching; 2.4.2 Packet Switching; 2.5 Channel Coding for Error Correction and Error Detection; 2.5.1 Forward Error Correction; 2.5.2 Automatic Repeat Request Protocols; 2.5.2.1 Send-and-Wait; 2.5.2.2 Go-back-N; 2.5.2.3 Selective-Reject; 2.5.2.4 Summary; 2.5.3 Hybrid Automatic Repeat Request; 2.6 Medium Access Control (MAC) Protocols; 2.6.1 ALOHA; 2.6.1.1 Pure ALOHA; 2.6.1.2 Slotted ALOHA; 2.6.1.3 Comparison of Pure and Slotted ALOHA; 2.6.2 Carrier Sense Multiple Access
2.6.2.1 CSMA Variants2.6.2.2 CSMA/CD; 2.6.2.3 CSMA/CA; 2.6.3 Polling; 2.6.4 Summary; 3 Radio Spectrum Regulation; 3.1 Regulation Bodies and Global Institutions; 3.1.1 International Telecommunication Union; 3.1.2 Europe; 3.1.3 Germany; 3.1.4 Japan; 3.1.5 China; 3.1.6 United States; 3.2 Licensed and Unlicensed Spectrum; 3.2.1 Licensed Spectrum; 3.2.2 The Problem with Licensing; 3.2.3 Unlicensed Spectrum; 3.2.3.1 Europe; 3.2.3.2 United States; 3.2.4 Part 15 Regulation; 3.2.5 Tragedy of the Commons in Spectrum Regulation; 3.3 Open Spectrum; 3.4 Summary; 4 Mesh Networks - Basics; 4.1 Introduction
4.2 Classification of Wireless Mesh Networks4.3 General Problem Statement; 4.3.1 Path Selection; 4.3.2 Medium Access Control; 4.4 Exploiting the Capacity of the Radio Channel by Spatial Reuse; 4.4.1 Hidden Devices - Potential Interferers; 4.4.2 Exposed Devices - Unused Capacity; 4.5 Fairness and Congestion Avoidance; 4.6 Routing; 4.6.1 Routing Algorithms; 4.6.1.1 Ad-hoc On-demand Distance Vector Routing (AODV); 4.6.1.2 Route Discovery; 4.6.1.3 Route Maintenance; 4.6.1.4 Local Repair; 4.6.2 Common Link Layer Behavior (Link Adaptation); 4.6.3 Link Breakage Prediction
4.6.4 Actions for Expected Link Break

Sommario/riassunto

Throughout the next decade, 802 wireless systems will become an integral part of fourth generation (4G) cellular communication systems, where the convergence of wireless and cellular networks will materialize through support of interworking and seamless roaming across dissimilar wireless and cellular radio access technologies. IEEE 802 Wireless Systems clearly describes the leading systems, covering IEEE 802.11 WLAN, IEEE 802.15 WPAN, IEEE 802.16 WMAN systems' architecture, standards and protocols (including mesh) with an instructive approach allowing individuals unfamiliar with wireles