1. Record Nr. UNINA9910831191903321

Autore	Etemad Kamran
Titolo	WiMAX technology and network evolution / / edited by Kamran Etemad, Ming-Yee Lai
Pubbl/distr/stampa	[Piscataway, New Jersey] : , : IEEE Press, , c2010 [Piscataqay, New Jersey] : , : IEEE Xplore, , [2011]
ISBN	1-283-03545-6 9786613035455 0-470-63301-8 0-470-63302-6
Descrizione fisica	1 online resource (535 p.)
Collana	The comsoc guides to communications technologies ; ; 6
Altri autori (Persone)	LaiMing <1952->
Disciplina	004.67 621.384
Soggetti	Wireless metropolitan area networks IEEE 802.16 (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	Preface -- Contributors -- Acronyms -- 1 WiMAX Standardization Overview (Kamran Etemad andMing-Yee Lai) -- 1.1 Introduction -- 1.2 IEEE 802.16 Working Group Structure and Standards -- 1.3 WiMAX Forum Overview -- 1.4 WiMAX Technology High-Level Road Map -- 1.5 Summary -- 1.6 References -- 2 Overview of Mobile WiMAX Air Interface in Release 1.0 (Kamran Etemad, Hassan Yaghoobi, and Masoud Olfat) -- 2.1 Introduction -- 2.2 Overview of Mobile WiMAX PHY Layer (Release 1.0) -- 2.3 Overview of Mobile WiMAX MAC Layer (Release 1.0) -- 2.4 WiMAX Forum System and Certification Profiles in Release 1.0 -- 2.5 Summary -- 2.6 References -- 3 WiMAX Air Interface Enhancements in Release 1.5 (Kamran Etemad and Hassan Yaghoobi) -- 3.1 Introduction -- 3.2 Support for Frequency Division Duplexing (FDD HFDD) -- 3.3 Optional MIMO Enhancements -- 3.4 MAC Enhancements -- 3.5 System Profile and Certification Profiles in Release 1.5 -- 3.6 Summary -- 3.7 References -- 4 MIMO Technologies in WiMAX (Qinghua Li, Jianzhong (Charlie) Zhang, Peiying Zhu, Wonil Roh, and Xintian Eddie Lin) -- 4.1 Introduction -- 4.2 Single

User MIMO -- 4.3 Multiuser MIMO -- 4.4 Distributed MIMO and Relay in IEEE 802.16j -- 4.5 Conclusions -- 4.6 References -- 5 Overview of IEEE 802.16m Radio Access Technology (Sassan Ahmadi) -- 5.1 Introduction to IEEE 802.16m -- 5.2 IEEE 802.16m System Requirements and Evaluation Methodology -- 5.3 IEEE 802.16m Reference Model and Protocol Structure -- 5.4 IEEE 802.16m Mobile Station State Diagram -- 5.5 Overview of IEEE 802.16m Physical Layer -- 5.6 Overview of the IEEE 802.16m MAC Layer -- 5.7 PHY and MAC Aspects of Multicarrier Operations -- 5.8 PHY and MAC Aspects of Multicast and Broadcast Services -- 5.9 Summary -- 5.10 References -- 6 Overview of WiMAX Network Architecture and Evolution (Kamran Etemad, Jicheol Lee, and Yong Chang) -- 6.1 Introduction -- 6.2 WiMAX Basic Network Reference Model -- 6.3 WiMAX Network Roadmap: Release 1.0, 1.5, 1.6, and 2.0 -- 6.4 Overview of Major Features in Release 1.0.
6.5 Overview of Major Features in Release 1.5 -- 6.6 Major Features in Network Release 1.6 -- 6.7 Comparison of Mobile WiMAX and 3GPP/SAE Network Architecture -- 6.8 Summary -- 6.9 References -- 7 Over-the-Air (OTA) Provisioning and Activation (Avishay Shraga) -- 7.1 Introduction -- 7.2 OTA High-Level Overview -- 7.3 WiMAX Network Architecture for OTA -- 7.4 OTA Protocol -- 7.5 OMADM -- 7.6 OTA Usage Model Examples -- 7.7 Summary -- 7.8 References -- 8 Mobility in WiMAX Networks (Shahab Sayeedi and Joseph R. Schumacher) -- 8.1 Introduction -- 8.2 Network Topology -- 8.3 Handover Modes -- 8.4 Scanning -- 8.5 Basic Handover Mechanics -- 8.6 WiMAX Network Support for Handovers (ASN Anchored Mobility) -- 8.7 Security Considerations -- 8.8 Seamless Handover -- 8.9 Handover Optimizations -- 8.10 Interaction with Other Features -- 8.11 Summary -- 8.12 References -- 9 WiMAX End-to-End Security Framework (Semyon B. Mizikovsky) -- 9.1 General Overview -- 9.2 WiMAX Security Requirements -- 9.3 End-to-End Security Architecture -- 9.4 Security Zones -- 9.5 Summary -- 9.6 References -- 10 Quality of Service (QoS) in WiMAX Networks (Mehdi Alasti and Behnam Neekzad) -- 10.1 Introduction -- 10.2 An Overview of QoS in Packet-Switched Networks -- 10.3 WiMAX QoS Architecture Overview -- 10.4 WiMAX QoS and Protocol Stack -- 10.5 WiMAX QoS Framework -- 10.6 WiMAX Policy Control and Charging (PCC) Framework -- 10.7 Improving WiMAX QoS Framework -- 10.8 Summary -- 10.9 References -- 11 Mobile WiMAX Integration with 3GPP and 3GPP2 Networks (Pouya Taaghol, Peretz Feder, and Ramana Isukapalli) -- 11.1 Introduction -- 11.2 WiMAX-3GPP Interworking -- 11.3 WiMAX-3GPP2 Interworking -- 11.4 WiMAX-IMS Interworking -- 11.5 Summary -- 11.6 References -- 12 Multicast and Broadcast Services in WiMAX Networks (Kamran Etemad and Limei Wang) -- 12.1 Introduction -- 12.2 Basic Terms, Requirements, and Use Cases -- 12.3 MAC and PHY Support for MBS -- 12.4 MCBCS Network Architecture -- 12.5 MCBCS Application-Layer Approach.
12.6 Summary -- 12.7 References -- 13 Location-Based Services in WiMAX Networks (Wayne Ballantyne, Muthaiah Venkatachalam, and Kamran Etemad) -- 13.1 Introduction -- 13.2 LBS Usage Models and Design Requirements -- 13.3 Review of Location Methods for Wireless Devices -- 13.4 WiMAX Network Reference Architecture for LBS -- 13.5 Summary -- 13.6 References -- 14 WiMAX Accounting (Avi Lior) -- 14.1 Introduction -- 14.2 Accounting Architecture -- 14.3 Accounting Concepts -- 14.4 Accounting Operations -- 14.5 Accounting at the Home Agent -- 14.6 Processing of Accounting Records in the Visited NSP -- 14.7 Processing of Accounting Records in the Home NSP -- 14.8 Error Handling by the AAA -- 14.9 Summary -- 14.10 References

-- 15 WiMAX Roaming (John Dubois and Chirag Patel) -- 15.1 Introduction -- 15.2 WiMAX Roaming Business Drivers and Stakeholders -- 15.3 Related Standards and Forums Activities -- 15.4 WiMAX Roaming Model -- 15.5 WiMAX Roaming Agreement Overview -- 15.6 WiMAX Roaming Guideline Overview -- 15.7 WiMAX Roaming Interface Overview -- 15.8 Summary -- 15.9 References -- 16 WiMAX Network Management Framework (Joey Chou) -- 16.1 Introduction -- 16.2 WiMAX Forum Network Management -- 16.3 IEEE 802.16 Network Management -- 16.4 Self-Organizing Networks -- 16.5 Summary -- 16.6 References -- 17 Ethernet Services In WiMAX Networks (Maximilian Riegel) -- 17.1 Introduction -- 17.2 Ethernet Services -- 17.3 Basic Ethernet Services Standards -- 17.4 Ethernet-based Access Aggregation in DSL Networks -- 17.5 Mobile WiMAX Network Architecture -- 17.6 Interworking with DSL Networks -- 17.7 Summary -- 17.8 References -- 18 WiMAX System Performance (Bong-Ho Kim, Jungham Yun, and Yerang Hur) -- 18.1 Introduction -- 18.2 Design of the End-to-End Application Performance Simulation -- 18.3 Radio Performance -- 18.4 Subscriber and Application Profile -- 18.5 Network Performance -- 18.6 End-to-End Application Performance -- 18.7 Summary -- 18.8 References -- 19 Femtocells and Multihop Relays in Mobile WiMAX Deployments (Jerry Sydir, Shilpa Talwar, Rakesh Taori, and Shu-Ping Yh).
19.1 Introduction -- 19.2 Multitier Cellular Architecture -- 19.3 Femtocells -- 19.4 Relay -- 19.5 Summary -- 19.6 References -- 20 WiMAX Spectrum Requirements and Regulatory Landscape (Rez Arefi andJayne Stancavage) -- 20.1 Introduction -- 20.2 WiMAX Spectrum Requirements -- 20.3 Regional and International Regulations and Regulatory Bodies -- 20.4 WiMAX Spectrum Bands -- 20.5 Global Regulatory Landscape -- 20.6 Spectrum Sharing -- 20.7 Summary -- 20.8 References -- Index.

Sommario/riassunto

Written and edited by experts who have developed WiMAX technology and standardsWiMAX, the Worldwide Interoperability for Microwave Access, represents a paradigm shift in telecommunications technology. It offers the promise of cheaper, smaller, and simpler technology compared to existing broadband options such as DSL, cable, fiber, and 3G wireless.WiMAX Technology and Network Evolution is the first publication to present an accurate, complete, and objective description of mobile WiMAX technology. Each chapter was written and edited by experts, all of whom have been directly engaged in and lead the development of WiMAX either through the IEEE 802.16 Working Group or the WiMAX Forum. As a result, the book addresses not only key technical concepts and design principles, but also a wide range of practical issues concerning this new wireless technology, including:. Detailed description of WiMAX technology features and capabilities from both radio and network perspectives. WiMAX technology evolution in the near and long term. Emerging broadband services enabled by the WiMAX networks. Regulatory issues affecting WiMAX deployment and global adoption. WiMAX accounting, roaming, and network managementEach chapter ends with a summary and a list of references to facilitate further research.Wireless engineers, service designers, product managers, telecommunications professionals, network operators, and academics will all gain new insights into the key issues surrounding the development and implementation of mobile WiMAX. Moreover, the book will help them make informed management and business decisions in devising their own WiMAX strategies.