

The Evolution Of 802.11 Wireless Security Kevin Benton

The next frontier for wireless LANs is 802.11ac, a standard that increases throughput beyond one gigabit per second. This concise guide provides in-depth information to help you plan for 802.11ac, with technical details on design, network operations, deployment, and monitoring. Author Matthew Gast—an industry expert who led the development of 802.11-2012 and security task groups at the Wi-Fi Alliance—explains how 802.11ac will not only increase the speed of your network, but its capacity as well. Whether you need to serve more clients with your current level of throughput, or serve your existing client load with higher throughput, 802.11ac is the solution. This book gets you started. Understand how the 802.11ac protocol works to improve the speed and capacity of a wireless LAN Explore how beamforming increases speed capacity by improving link margin, and lays the foundation for multi-user MIMO Learn how multi-user MIMO increases capacity by enabling an AP to send data to multiple clients simultaneously Plan when and how to upgrade your network to 802.11ac by evaluating client devices, applications, and network connections This book constitutes the refereed proceedings of the Third International Conference on Mobile Ad-hoc and Sensor Networks, MSN 2007, held in Beijing, China, in December 2007. The papers address all current issues in mobile ad hoc and sensor networks and are organized in topical sections on routing, network protocols, energy efficiency, data processing, self-organization and synchronization, deployment and application, as well as security. This is a self-contained book on the foundations and applications of optical and microwave technologies to telecommunication networks application, with an emphasis on access, local, road, cars, trains, vessels and airplanes, indoor and in-car data transmission as well as for long-distance fiber-systems and application in outer space and automation technology. The book provides a systematic discussion of physics/optics, electromagnetic wave theory, optical fibre technology, and the potential and limitations of optical and microwave transmission.

InfoWorld is targeted to Senior IT professionals. Content is segmented into Channels and Topic Centers. InfoWorld also celebrates people, companies, and projects.

An IT and Security Comparison Decision Support System for Wireless LANs

IEEE 802.11 223 Success Secrets - 223 Most Asked Questions on IEEE 802.11 - What You Need to Know

11th Asia-Pacific Network Operations and Management Symposium, APNOMS 2008, Beijing, China, October 22-24, 2008. Proceedings

A Designer's Companion

The Evolution of Childhood

Exam CWSP-205

A comprehensive guide to the concepts and applications of queuing theory and traffic theory Network Traffic Engineering: Models and Applications provides an advanced level queuing theory guide for students with a strong mathematical background who are interested in analytic modeling and performance assessment of communication networks. The text begins with the basics of queueing theory before moving on to more advanced levels. The topics covered in the book are derived from the most cutting-edge research, project development, teaching activity, and discussions on the subject. They include applications of queuing and traffic theory in: LTE networks Wi-Fi networks Ad-hoc networks Automated vehicles Congestion control on the Internet The distinguished author seeks to show how insight into practical and real-world problems can be gained by means of quantitative modeling. Perfect for graduate students of computer engineering, computer science, telecommunication engineering, and electrical engineering, Network Traffic Engineering offers a supremely practical approach to a rapidly developing field of study and industry.

Provides a clear, coherent review of all major wireless broadband standards with an emphasis on managing the explosive growth in mobile video 802.11ac/ad, 802.16m, 802.22, and LTE-Advanced are the emerging broadband wireless standards that offer many powerful wireless features. This book gives an accessible overview of the various standards and practical information on 802.11 link adaptation, 4G smartphone antenna design, wireless video streaming, and smart grids. Broadband Wireless Multimedia Networks distills the many complex wireless features in a clean and concise manner so that the reader can understand the key principles. Topics covered include adaptive modulation and coding, orthogonal frequency-division multiple access, single-carrier frequency-division multiple access, multiple antenna systems, medium access control time and frequency-division duplex, transmission, and the frame formats. With wireless operators now carrying a much greater amount of video traffic than data and voice traffic, the book also covers adaptive bit rate streaming and bandwidth management for 3D and HD video delivery to multi-screen personal devices. Featured chapters in the book are: Overview of Broadband Wireless Networks IEEE 802.11 Standard IEEE 802.16 Standard IEEE 802.16 Standard Long-Term Evolution ATSC Digital TV and IEEE 802.22 Standards Mesh, Relay, and Interworking Networks Wireless Video Streaming Green Communications in Wireless Home Area Networks Including over 180 chapter-end exercises and 200 illustrative figures; and accessible recorded tutorials, Broadband Wireless Multimedia Networks is ideal for industry professionals and practitioners, graduate students, and researchers.

As we all know by now, wireless networks offer many advantages over fixed (or wired) networks. Foremost on that list is mobility, since going wireless frees you from the tether of an Ethernet cable at a desk. But that's just the tip of the cable-free iceberg. Wireless networks are also more flexible, faster and easier for you to use, and more affordable to deploy and maintain. The de facto standard for wireless networking is the 802.11 protocol, which includes Wi-Fi (the wireless standard known as 802.11b) and its faster cousin, 802.11g. With easy-to-install 802.11 network hardware available everywhere you turn, the choice seems simple, and many people dive into wireless computing with less thought and planning than they'd give to a wired network. But it's wise to be familiar with both the capabilities and risks associated with the 802.11 protocols. And 802.11 Wireless Networks: The Definitive Guide, 2nd Edition is the perfect place to start. This updated edition covers everything you'll ever need to know about wireless technology. Designed with the system administrator or serious home user in mind, it's a no-nonsense guide for setting up 802.11 on Windows and Linux. Among the wide range of topics covered are discussions on: deployment considerations network monitoring and performance tuning wireless security issues how to use and select access points network monitoring essentials wireless card configuration security issues unique to wireless networks With wireless technology, the advantages to its users are indeed plentiful. Companies no longer have to deal with the hassle and expense of wiring buildings, and households with several computers can avoid fights over who's online. And now, with 802.11 Wireless Networks: The Definitive Guide, 2nd Edition, you can integrate wireless technology into your current infrastructure with the utmost confidence.

For more than 20 years, Network World has been the premier provider of information, intelligence and insight for network and IT executives responsible for the digital nervous systems of large organizations. Readers are responsible for designing, implementing and managing the voice, data and video systems their companies use to support everything from business critical applications to employee collaboration and electronic commerce.

Wi-Fi Protected Access and 802.11i

A Tutorial Guide

MIMO-OFDM for LTE, WiFi and WiMAX

Optical and Microwave Technologies for Telecommunication Networks

Vehicular ad hoc Networks

802.11 Infosec and Wifi LAN Comparison

The first generation 802.11 wireless market, once struggling to expand, has spread from largely vertical applications such as healthcare, point of sale, and inventory management to become much more broad as a general networking technology being deployed in offices, schools, hotel guest rooms, airport departure areas, airplane cabins, entertainment venues, coffee shops, restaurants, and homes. This has led to the tremendous growth of new sources of IEEE 802.11 devices. IEEE 802.11 equipment is now moving into its second stage, where the wireless LAN is being treated as a large wireless communication system. As a system, there is more to consider than simply the communication over the air between a single access point and the associated mobile devices. This has led to innovative changes in the equipment that makes up a wireless LAN. The IEEE 802.11 Handbook: A Designer's Companion, Second Edition is for the system network architects, hardware engineers and software engineers at the heart of this second stage in the evolution of 802.11 wireless LANs and for those designers that will take 802.11 to the next stage.

Research and development in wireless and mobile networks and services areas have been going on for some time, reaching the stage of products. Graceful evolution of networks, new access schemes, flexible protocols, increased variety of services and applications, networks reliability and availability, security, are some of the present and future challenges that have to be met. MWCN (Mobile and Wireless Communications Networks) and PWC (Personal Wireless Communications) are two conferences sponsored by IFIP WG 6.8 that provide forum for discussion between researchers, practitioners and students interested in new developments in mobile and wireless networks, services, applications and computing. In 2008, MWCN and PWC were held in Toulouse, France, from September 30 to October 2, 2008. WMNC'2008 and PWC'2008 were coupled to form the first edition of IFIP Wireless and Mobile Networking Conference (WMNC'2008). MWCN and PWC topics were revisited in order to make them complementary and covering together the main hot issues in wireless and mobile networks, services, applications, computing, and technologies. There has never been a 802.11n Guide like this. It contains 162 answers, much more than you can imagine; comprehensive answers and extensive details and references, with insights that have never before been offered in print. Get the information you need—fast! This all-embracing guide offers a thorough view of key knowledge and detailed insight. This Guide introduces what you want to know about 802.11n. A quick look inside of some of the subjects covered: 802.11 – 802.11-2012, AirPort AirPort Extreme 802.11n, Inter-Access Point Protocol, MacBook Pro – First generation, Redpine Signals – Products and Services, IEEE 802.11n-2009 – Number of antennas, Asus Eee PC – Other Eee 90x models, Xbox One – Hardware, HP Networking – History, IEEE 802.11n-2009 – Wi-Fi Alliance, Airport Extreme – Overview, Wi-Fi – Range, IEEE 802.11n-2009 – Deployment strategies, 802.11ac, MIMO – Wireless standards, Nexus 10 – Hardware and design, MediaTek – IEEE 802.11, Smart appliance – Wireless radio, DASH7 – Technical summary, 802.11 – General description, IEEE 802.11 – General description, Outline of Apple Inc. – Hardware accessories, Wireless LAN – History, IEEE 802.11ac – New technologies, Wireless access point – Limitations, Wi-Fi Limitations, 802.11 – 802.11n, List of Xbox 360 accessories – Wireless Network Adapter, IEEE 802.11ad, 802.11ac – Mandatory and optional features, 802.11 – Channels and frequencies, Orthogonal frequency-division multiplexing – Wireless local area networks (LAN) and metropolitan area networks (MAN), IEEE 802.11g-2003, IEEE 802.11 – Standard and amendments, 802.11n – Timeline, Multiple-input multiple-output – Multi-antenna types, Mac Mini – Design, IEEE 802.11n-2009 – Description, Free (ISP) – Freebox device, 802.11n – Backward compatibility, and much more...

IEEE 802.11 HandbookA Designer's CompanionIEEE Standards Association

IP in Wireless Networks

CWSP Certified Wireless Security Professional Official Study Guide

Network World

Corporate and Global Standardization Initiatives in Contemporary Society

Evolution of Telecommunication Services

This book presents vehicular ad-hoc networks (VANETs) from the their onset, gradually going into technical details, providing a clear understanding of both theoretical foundations and more practical investigation. The editors gathered top-ranking authors to provide comprehensiveness and timely content; the invited authors were carefully selected from a list of who's who in the respective field of interest: there are as many from Academia as from Standardization and Industry sectors from around the world. The covered topics are organized around five Parts starting from an historical overview of vehicular communications and standardization/harmonization activities (Part I), then progressing to the theoretical foundations of VANETs and a description of the day-one standard-compliant solutions (Part II), hence going into details of vehicular networking and security (Part III) and to the tools to study VANETs, from mobility and channel models, to network simulators and field trial methodologies (Part IV), and finally looking into the future of VANETs by investigating alternative, complementary communication technologies, innovative networking paradigms and visionary applications (Part V). The way the content is organized, with a differentiated level of technical details, makes the book a valuable reference for a large pool of target readers ranging from undergraduate, graduate and PhD students, to wireless scientists and engineers, to service providers and stakeholders in the automotive, ITS, ICT sectors.

In the telecom world, services have usually been conceived with a specific mindset. This mindset has defined the traditional characteristics of these services; services distinguished by their linkage with the access network, tight control over service use (e.g., authentication, billing), lack of deep personalization capabilities (mass services only) and reliance on standardization to achieve end-to-end interoperability between all the actors of the value chain (e.g., operators, platform manufacturers, device manufactures). This book offers insights into this complex but exciting world of telecommunications characterized by constant evolution, and approaches it from technology as well as business perspectives. The book is appropriately structured in three parts: (a) an overview of the state-of-the-art in fixed/mobile NGN and standardization activities; (b) an analysis of the competitive landscape between operators, device manufactures and OTT providers, emphasizing why network operators are challenged on their home turf; and (c) opportunities for business modeling and innovative telecom service offers.

IP in Wireless Networks is the first network professional's guide to integrating IP in 2G, 2.5G, and 3G wireless networks. It delivers systematic, expert implementation guidance for every leading wireless network, including 802.11, Bluetooth, GSM/GPRS, W-CDMA, cdma2000, and i-mode. In-depth coverage encompasses architecture, technical challenges, deployment and operation strategies, mobility models, routing, and applications. The book presents future evolution of the Wireless IP Networks with emerging applications and the role of standardization bodies.

This book is an intellectual tour de force: a comprehensive Darwinian interpretation of human development. Looking at the entire range of human evolutionary history, Melvin Konner tells the compelling and complex story of how cross-cultural and universal characteristics of our growth from infancy to adolescence became rooted in genetically inherited characteristics of the human brain. All study of our evolution starts with one simple truth: human beings take an extraordinarily long time to grow up. What does this extended period of dependency have to do with human brain growth and social interactions? And why is play a sign of cognitive complexity, and a spur for cultural evolution? As Konner explores these questions, and topics ranging from bipedal walking to incest taboos, he firmly lays the foundations of psychology in biology. As his book eloquently explains, human learning and the greatest human intellectual accomplishments are rooted in our inherited capacity for attachments to each other. In our love of those we learn from, we find our way as individuals and as a species. Never before has this intersection of the biology and psychology of childhood been so brilliantly described. "Nothing in biology makes sense except in the light of evolution," wrote Dobzhansky. In this remarkable book, Melvin Konner shows that nothing in childhood makes sense except in the light of evolution.

IEEE 802.11 Handbook

Mobile Peer to Peer (P2P)

Challenges for Next Generation Network Operations and Service Management

Broadband Wireless Multimedia Networks

CWSP Certified Wireless Security Professional Study Guide

Mobility Models for Next Generation Wireless Networks

This brief offers a valuable resource on principles of quality-of-service (QoS) provisioning and the related link-layer resource management techniques for high data-rate wireless networks. The primary emphasis is on protocol modeling and analysis. It introduces media access control (MAC) protocols, standards of wireless local area networks (WLANs), wireless personal area networks (WPANs), and wireless body area networks (WBANs), discussing their key technologies, applications, and deployment scenarios. The main analytical approaches and models for performance analysis of the fundamental resource scheduling mechanisms, including the contention-based, reservation-based, and hybrid MAC, are presented. To help readers understand and evaluate system performance, the brief contains a range of simulation results. In addition, a thorough bibliography provides an additional tool. This brief is an essential resource for engineers, researchers, students, and users of wireless networks.

There has been phenomenal uptake of wireless and mobile networking technologies in the past decades. Significant developments have taken place during this time making the wireless technology more affordable, effective, and reliable. This book explains the fundamental principles and protocols of key existing and emerging wireless networking technologies. The book begins with a review of the fundamentals of wireless communications. It covers the basic theories and terminologies of coding and modulation, which maps digital information to the underlying signal, as well as the models to capture the dynamics of wireless signal propagation in the environment. It provides in-depth coverage of the WiFi evolution covering both the mainstream WiFi, which operates in 2.4/5GHz with new versions targeting 6GHz, as well as some of the niche WiFi standards that operate outside the mainstream bands such as 802.11af in 700MHz TV bands, 802.11ah in 900MHz to connect the Internet of Things (IoT), and 802.11ad/ay in 60GHz to support multi-gigabit applications. The book covers the fundamental concepts of cellular networks, examines the advancements brought forth by each generation, and discusses new applications and the underpinning wireless technologies promised by 5G. It also covers a recently developed long-range low-power wireless networking technology called LoRa, which is the fastest growing technology to connect millions of IoT sensors and devices throughout the world. The concluding chapters examine emerging wireless paradigms such as Artificial Intelligence for wireless networking, sensing with wireless signals, and mobile networking with flying base stations carried by drones and unmanned aerial vehicles (UAVs). With many worked-out examples, illustrative figures, and multiple choice questions, this book is an ideal for students and a valuable reference for anyone working in this rapidly evolving field.

This book investigates new enabling technologies for Fi-Wi convergence. The editors discuss Fi-Wi technologies at the three major network levels involved in the path towards convergence: system level, network architecture level, and network management level. The main topics will be: a. At system level: Radio over Fiber (digitalized vs. analogic, standardization, E-band and beyond) and 5G wireless technologies; b. Network architecture level: NGPON, WDM-PON, BBU Hotelling, Cloud Radio Access Networks (C-RANs), HetNets. c. Network management level: SDN for convergence, Next-generation Point-of-Presence, Wi-Fi LTE Handover, Cooperative MultiPoint.

A textbook that lays down the foundational principles for understanding social neuroscience Humans, like many other animals, are a highly social species. But how do our biological systems implement social behaviors, and how do these processes shape the brain and biology? Spanning multiple disciplines, Introduction to Social Neuroscience seeks to engage students and scholars alike in exploring the effects of the brain's perceived connections with others. This wide-ranging textbook provides a quintessential foundation for comprehending the psychological, neural, hormonal, cellular, and genomic mechanisms underlying such varied social processes as loneliness, empathy, theory-of-mind, trust, and cooperation. Stephanie and John Cacioppo posit that our brain is our main social organ. They show how the same objective relationship can be perceived as friendly or threatening depending on the mental states of the individuals involved in that relationship. They present exercises and evidence-based findings readers can put into practice to better understand the neural roots of the social brain and the cognitive and health implications of a dysfunctional social brain. This textbook's distinctive features include the integration of human and animal studies, clinical cases from medicine, multilevel analyses of topics from genes to societies, and a variety of methodologies. Unveiling new facets to the study of the social brain's anatomy and function, Introduction to Social Neuroscience widens the scientific lens on human interaction in society. The first textbook on social neuroscience intended for advanced undergraduates and graduate students Chapters address the psychological, neural, hormonal, cellular, and genomic mechanisms underlying the brain's perceived connections with others Materials integrate human and animal studies, clinical cases, multilevel analyses, and multiple disciplines

Exam PWQ-204

802.11 Wireless Networks: The Definitive Guide

**Proceedings of the 11th International Conference on P2P, Parallel, Grid, Cloud and Internet Computing (3PGCIC–2016) November 5–7, 2016, Soonchunhyang University, Asan, Korea
IFIP Joint Conference on Mobile Wireless Communications Networks (MWCN'2008) and Personal Wireless Communications (PWC'2008), Toulouse, France, September 30 - October 2, 2008
Broadband Applications and the Digital Home
InfoWorld**

The explosive growth in usage of IEEE 802.11 based WLAN networks has resulted in dense deployments in diverse environments and has made the concept of anytime - anywhere data connectivity a realm of commercial reality. The IEEE 802.11 standard has evolved as a key enabling technology to cover medium to large scale enterprises, public area hotspots, apartment complexes etc. Such environments are characterized to encompass multiple small cells with many access points and serve large numbers of client stations. Improved coverage and higher data rates are the primary achievements, where many cells coexist to create an environment containing multiple Overlapping Basic Service Sets. This small cell deployment is also considered as a key component of the next generation wireless communication to provide greater end user experience. Adjacent access points can choose different frequency bands (if available) for operations to avoid interference for the client stations placed at the cell edge. However, the interference created by overlapping cells using similar frequency can adversely result in reduced performance. Moreover, the overly protected contention-based medium access mechanism of IEEE 802.11 also limits the possibility of concurrent transmissions. The increased number of access points deployed in complex untrusted network environments can also induce network management challenges that incorporate inconsistent security. The work presented in this thesis originates from the need to understand some of the key challenges affecting legacy IEEE 802.11 protocols under high density scenarios and to design mechanisms that improve network performance within overlapping cells. Through our work, we have contributed to the evolution of IEEE 802.11 standard by demonstrating network enhancements in three important dimensions: availability, capacity and interference management. Throughout the thesis, methods are proposed that require minimum modifications to be made over the existing IEEE 802.11 protocols. Yet, with the help of extensive evaluation, the proposed schemes have shown considerable performance improvements. The contributions made in this thesis significantly advance the state-of-the-art for IEEE 802.11 WLANs along the lines of the aforementioned three dimensions. To better understand the security threat that a jammer entails, first this thesis demonstrates the impact of a jammer on IEEE 802.11 and proposes a novel malicious entity detection scheme, called Beacon Access Time, that is required before taking appropriate countermeasures to improve the availability of IEEE 802.11. Next, a new IEEE 802.11 standard called IEEE 802.11ah, is evaluated as an alternative to densely deployed overlapping Wi-Fi cells. This amendment aims to improve on legacy IEEE 802.11 by enhancing the coverage as well as supporting increased number of associated stations. Also, recent technological additions to IEEE 802.11 standard with the intent to improve operations within high density environments, in the form of future IEEE 802.11ax amendment, are also explored. To enhance network capacity, a technique named Dynamic Sensitivity Control, is introduced which dynamically adapts carrier sensing and improves the area throughput (spatial reuse) within dense WLAN deployments by limiting the impact of increased interference. Detailed simulation results indicate that this scheme allowed multiple concurrent transmissions to coexist and, thus, increases the overall network throughput and fairness over the cost of increased frame error. Finally, an access point controlled four-way handshake mechanism is proposed that can improve the performance of dense deployments by reducing interference and frame error rate. Different contributions proposed throughout this thesis provide solutions for amicable operations of densely deployed Wi-Fi cells. The importance of the presented work is also validated through our contributions to the IEEE 802.11ax task group.

Conclusions and Future Research.

There has never been a 802.11ad Guide like this. It contains 18 answers, much more than you can imagine; comprehensive answers and extensive details and references, with insights that have never before been offered in print. Get the information you need--fast! This all-embracing guide offers a thorough view of key knowledge and detailed insight. This Guide introduces what you want to know about 802.11ad. A quick look inside of some of the subjects covered: IEEE P1901 - Availability, IEEE 802.11ad - History, 802.11 - 802.11ad, AES-GCM - Use, Home network - Leaky Wi-Fi, Extremely high frequency - Telecommunications, Galois/Counter Mode - Use, IEEE 802.11-2007 - 802.11ad, IEEE 802.11-2007 - Standard and amendments, Wireless Gigabit Alliance - History, IEEE 802.11 - 802.11ad, IEEE 1901 - Availability, Smart appliance - Leaky Wi-Fi, IEEE 802.11 - Standard and amendments, and much more...

The fields of communication, signal processing, and embedded systems and circuits are brought together in this book. These fields come together with a single design goal, a WLAN transceiver which combines analog and digital design, VLSI and systems design, algorithms and architectures, as well as design and CAD/EDA. This book focuses on the overall approach to design problems and design organization needed for transceiver design. It does not focus on one particular standard.

802.11ax: A Hyperconnected World and the Next-Generation Wifi

Ad Hoc, Vehicular and Mesh Networks

802.11ac: A Survival Guide

The Convergence of Telecom and Internet: Technologies and Ecosystems

IEEE 802.11ac: High-impact Technology - What You Need to Know

Stochastic Models and Applications

A Testament To IEEE 802.11. IEEE 802.11 is a set of media access command (MAC) and material level (PHY) descriptions for executing wireless native zone network (WLAN) computer information exchange in the 2.4, 3.6, 5 and 60 GHz incidence groups. They are generated and preserved by the IEEE LAN/MAN Standards Committee (IEEE 802). The center variant of the criterion was disseminated in 1997 and has had following alterations. The criterion and alterations supply the base for wireless network articles utilizing the Wi-Fi brand. While every one alteration is formally revoked once it is integrated in the newest variant of the criterion, the business society inclines to trade to the alterations since they briefly mean abilities of their articles. As an effect, in the trade place, every one alteration inclines to come to be its personal normal. There has never been a IEEE 802.11 Guide like this. It contains 223 answers, much more than you can imagine; comprehensive answers and extensive details and references, with insights that have never before been offered in print. Get the information you need--fast! This all-embracing guide offers a thorough view of key knowledge and detailed insight. This Guide introduces what you want to know about IEEE 802.11. A quick look inside of some of the subjects covered: History of IEEE 802.11 - 802.11aj, IEEE 802.11 (legacy mode) - Description, IEEE 802.11n-2009 - Timeline, IEEE 802.11v - Status, History of IEEE 802.11 - General description, IEEE 802.11e-2005 - Other 802.11e specifications, IEEE 802.11ah - Sectorization, IEEE 802.11ac - New technologies, IEEE 802.11i-2004 - The Four-Way Handshake, IEEE 802.11a-1999 - Timing and compatibility of products, IEEE 802.11-2007 - 802.11a (OFDM Waveform), IEEE 802.11p - Description, IEEE 802.11 - 802.11ac, IEEE 802.11n - Wi-Fi Alliance, IEEE 802.11p - Timing advertisement, IEEE 802.11j, IEEE 802.11 - Layer 2 - Datagrams, and much more...

This book explores the technological challenges and applications of providing fast, "always on" internet connections to the home. Current delivery mechanisms of broadband into and around the home are explored in depth, as well as the current and emerging applications of the technology. The authors discuss what drives people to adopt the technology, how it is being used, the massive potential for the technology, and the home of the future. This fascinating book provides balanced coverage of the issues surrounding this next phase of the Internet that promises to transform the our homes and the way we live.

This is the world's first book entirely dedicated to 802.11ax! 802.11ax (High-Efficiency Wireless) is the next evolution of WiFi, the most successful wireless technology in the world. This new release brings some of the most fabulous advances ever seen in wireless communications for decades and will be the enabling technology for IoT (Internet of Things), Big Data, Smart Cities, Industry 4.0, Edge Computing, and the Tactile Internet. With over 120 pages and more than 60 detailed figures and tables, this book is not a raw analysis of the 802.11ax standard. It is made for both academics and industry experts and includes state-of-the-art information, as well as novel research trends. Whether or not you have a thorough knowledge of the previous 802.11 releases, this book will guide you through the following topics: Why ours is a WiFi world. How WiFi works, and what each main feature contributed to the standard during the last two decades. Which are the main challenges of modern wireless networks. What are the features introduced by 802.11ax, both on PHY and MAC layers. Why uplink and downlink MU-MIMO is a giant leap for the WiFi industry, and how it works. Why OFDMA (Orthogonal Frequency Division Multiple Access) orchestrates the transmission of different devices, and how it works. How to transmit and receive at the same time with IBFD (In-Band Full Duplex). How to deliver 4K video data rates with 1024-QAM. How to achieve a better use of radio resources with BSS coloring and TWT (Target Wake Time). How to cover outdoor environments like stadiums or Smart Cities with new frame formats and longer symbols. This book aims to be the companion guide for engineers, scientists, technicians, and industry players that seek to understand the new features, challenges, and opportunities of 802.11ax: the WiFi standard that will disrupt how humans and things connect during the next decade! Pablo Aguilera (PhD) works as a Senior Researcher at Galgus, an award-winning, fast-growing, high-tech European startup that creates WiFi optimization software. He has passed the last 11 years teaching, designing, and implementing signal processing solutions for advanced wireless communications.

Mobility Models for Next Generation Wireless Networks: Ad Hoc, Vehicular and Mesh Networks provides the reader with an overview of mobility modelling, encompassing both theoretical and practical aspects related to the challenging mobility modelling task. It also: Provides up-to-date coverage of mobility models for next generation wireless networks Offers an in-depth discussion of the most representative mobility models for major next generation wireless network application scenarios, including WLAN/mesh networks, vehicular networks, wireless sensor networks, and opportunistic networks Demonstrates the practices for designing effective protocol/applications for next generation wireless networks Includes case studies showcasing the importance of properly understanding fundamental mobility model properties in wireless network performance evaluation

802.11n: A Survival Guide

802.11n 162 Success Secrets - 162 Most Asked Questions on 802.11n - What You Need to Know

802.11ad 18 Success Secrets - 18 Most Asked Questions on 802.11ad - What You Need to Know

Definitions, Adoptions, Impact, Benefits, Maturity, Vendors

Network Traffic Engineering

Real 802.11 Security

This book describes new approaches to wireless security enabled by the recent development of new core technologies for Wi-Fi/802.11. It shows how the new approaches work and how they should be applied for maximum effect. For system administrators, product designers, or advanced home users.

This book constitutes the refereed proceedings of the 11th Asia-Pacific Network Operations and Management Symposium, APNOMS 2008, held in Beijing, China, in October 2008. The 43 revised full papers and 34 revised short papers presented were carefully reviewed and selected from 195 submissions. The papers are organized in topical sections on routing and topology management; fault management; community and virtual group management; autonomous and distributed control; sensor network management; traffic identification; QoS management; policy and service management; wireless and mobile network management; security management; short papers.

In fields as diverse as research and development, governance, and international trade, success depends on effective communication and processes. However, limited research exists on how professionals can utilize procedures and express themselves consistently across disciplines. Corporate and Global Standardization Initiatives in Contemporary Society is a critical scholarly resource that examines standardization in organizations. Featuring coverage on a broad range of topics, such as business standards, information technology standards, and mobile communications, this book is geared towards professionals, students, and researchers seeking current research on standardization for diverse settings and applications.

Explore the potential of mobile P2P networks Mobile Peer to Peer (P2P): A Tutorial Guide discusses the potential of wireless communication among mobile devices forming mobile peer to peer networks. This book provides the basic programming skills required to set up wireless communication links between mobile devices, offering a guide to the development process of mobile peer to peer networks. Divided into three sections, Part I briefly introduces the basics of wireless technologies, mobile architectures, and communication protocols. Detailed descriptions of Bluetooth, IEEE802.11, and cellular communication link are given and applied to potential communication architectures. Part II focuses on programming for individual wireless technologies, and gives an understanding of the programming environment for individual wireless technologies. In addition, Part III provides advanced examples for mobile peer to peer networks. Introduces the basics of short-range/wireless technologies (such as Bluetooth and IEEE 802.11 Wireless LAN), mobile architectures, and communication protocols Explains the basic programming environment and the basic wireless communication technologies such as Bluetooth, WiFi (IEEE802.11), and cellular communication examples Discusses the advancements in meshed networks, mobile social networks and cooperative networks Provides detailed examples of mobile peer to peer communication including, social mobile networking, cooperative wireless networking, network coding, and mobile gaming Includes an accompanying website containing programming examples as source code Mobile Peer to Peer (P2P): A Tutorial Guide is an invaluable reference for advanced students on wireless/mobile communications courses, and researchers in various areas of mobile communications (mashups, social mobile networks, network coding, etc.) Undergraduate students and practitioners wishing to learn how to build mobile peer to peer networks will also find this book of interest.

Coherent Versus Non-coherent and Cooperative Turbo Transceivers

Systems, Architectures, and Management

Relationships, Emotion, Mind

Wireless Transceiver Systems Design

Resource Management for Multimedia Services in High Data Rate Wireless Networks

Wireless and Mobile Networking

The most detailed, comprehensive coverage of CWSP-205 exam objectives CWSP: Certified Wireless Security Professional Study Guide offers comprehensive preparation for the CWSP-205 exam. Fully updated to align with the new 2015 exam, this guide covers all exam objectives and gives you access to the Sybex interactive online learning system so you can go into the test fully confident in your skills. Coverage includes WLAN discovery, intrusion and attack, 802.11 protocol analysis, wireless intrusion prevention system implementation, Layer 2 and 3 VPN over 802.11 networks, managed endpoint security systems, and more. Content new to this edition features discussions about BYOD and guest access, as well as detailed and insightful guidance on troubleshooting. With more than double the coverage of the "official" exam guide, plus access to interactive learning tools, this book is your ultimate solution for CWSP-205 exam prep. The CWSP is the leading vendor-neutral security certification administered for IT professionals, developed for those working with and securing wireless networks. As an advanced certification, the CWSP requires rigorous preparation — and this book provides more coverage and expert insight than any other source. Learn the ins and outs of advanced network security Study 100 percent of CWSP-205 objectives Test your understanding with two complete practice exams Gauge your level of preparedness with a pre-test assessment The CWSP is a springboard for more advanced certifications, and the premier qualification employers look for in the field. If you've already earned the CWTS and the CWNA, it's time to take your career to the next level. CWSP: Certified Wireless Security Professional Study Guide is your ideal companion for effective, efficient CWSP-205 preparation.

P2P, Grid, Cloud and Internet computing technologies have been very fast established as breakthrough paradigms for solving complex problems by enabling aggregation and sharing of an increasing variety of distributed computational resources at large scale. The aim of this volume is to provide latest research findings, innovative research results, methods and development techniques from both theoretical and practical perspectives related to P2P, Grid, Cloud and Internet computing as well as to reveal synergies among such large scale computing paradigms. This proceedings volume presents the results of the 11th International Conference on P2P, Parallel, Grid, Cloud And Internet Computing (3PGCIC-2016), held November 5-7, 2016, at Soonchunhyang University, Asan, Korea

Wireless has finally come of age. With a significant jump in throughput over previous standards, 802.11n is the first wireless technology that doesn't trade speed for mobility, and users have stormed onto wireless networks with a passion. In this concise guide, Matthew Gast—chair of the IEEE group that produced revision 802.11-2012—shows you why wireless has become the default method of connecting to a network, and provides technical details you need to plan, design, and deploy 802.11n today. Building a network for the multitude of new devices is now a strategic decision for network engineers everywhere. This book gives you an in-depth look at key parts of 802.11n, and shows you how to achieve an Ethernet-free wireless office. Learn how MIMO's multiple data streams greatly increase wireless speed Discover how 802.11n modifications improve MAC efficiency Examine advanced PHY features such as beamforming and space-time code block Use advanced MAC features to maintain interoperability with older devices Plan an 802.11n network by determining traffic demand, key applications, power requirements, and security Choose the architecture, select hardware, and plan coverage to design and build your network

"Building a network for the multitude of new devices is now a strategic decision for network engineers everywhere. This book give you an in-depth look at key parts of 802.11n, and shows you how to achieve an Ethernet-free wireless office"--Back cover.

Standards, Solutions, and Research

The Definitive Guide

Wireless Communication

Introduction to Social Neuroscience

Mobile Ad-hoc and Sensor Networks

Third International Conference, MSN 2007 Beijing, China, December 12-14, 2007 Proceedings

Sybex is now the official publisher for Certified Wireless Network Professional, the certifying vendor for the CWSP program. This guide covers all exam objectives, including WLAN discovery techniques, intrusion and attack techniques, 802.11 protocol analysis. Wireless intrusion-prevention systems implementation, layer 2 and 3 VPNs used over 802.11 networks, and managed endpoint security systems. It also covers enterprise/SMB/SOHO/Public-Network Security design models and security solution implementation, building robust security networks, wireless LAN management systems, and much more.

IEEE 802.11ac is a wireless standard of 802.11 currently under development which will provide high throughput Wireless Local Area Networks (WLAN) below 6 GHz (i.e., what is commonly known as the 5 GHz band). Theoretically, this specification will enable multi-station WLAN throughput of at least 1 gigabit per second (1 Gbit/s) and a maximum single link throughput of at least 500 megabit per second (500 Mbit/s). This is accomplished by extending the air interface concepts embraced by 802.11n: wider RF bandwidth (up to 160 MHz), more MIMO spatial streams (up to 8), multi-user MIMO, and high-density modulation (up to 256 QAM). On January 20, 2011, the Initial Technical Specification Draft 0.1 was confirmed by IEEE 802.11 TGac. Standard finalization is anticipated in late 2012, with final 802.11 Working Group approval in late 2013. According to a study, devices with the 802.11ac specification are expected to become common by 2015 with an estimated 1 billion spread around the world. This book is your ultimate resource for IEEE 802.11ac. Here you will find the most up-to-date information, analysis, background and everything you need to know. In easy to read chapters, with extensive references and links to get you to know all there is to know about IEEE 802.11ac right away, covering: IEEE 802.11ac, IEEE 802.11, 125 High Speed Mode, IEEE 802.11 (legacy mode), 802.11 non-standard equipment, IEEE 802.11a-1999, Wireless access point, Yota Egg, AEGIS SecureConnect, Announcement Traffic Indication Message, Arbitration inter-frame spacing, Block acknowledgement, IEEE 802.11b-1999, Beacon frame, CALM M5, Capwap, Carrier sense multiple access with collision avoidance, CCMP, Complementary code keying, DCF Interframe Space, Distributed coordination function, IEEE 802.11d-2001, Direct-sequence spread spectrum, Exposed node problem, Extended interframe space, IEEE 802.11e-2005, Frame aggregation, IEEE 802.11g-2003, Hidden node problem, IEEE 802.11h-2003, IEEE 802.11i-2004, Information Element, Inter-Access Point Protocol, IEEE 802.11j-2004, IEEE 802.11k-2008, Line-of-sight propagation, List of WLAN channels, Lorcon, MeshBox, IEEE 802.11n-2009, Nitro (wireless networking), IEEE 802.11p, PCF Interframe Space, Point coordination function, Power control, IEEE 802.11r-2008, Reduced Interframe Space, Received Channel Power Indicator, Received signal strength indication, Regdomain, Roofnet, IEEE 802.11 RTS/CTS, IEEE 802.11s, Short Interframe Space, Super G (wireless networking), Temporal Key Integrity Protocol, TU (Time Unit), IEEE 802.11u, IEEE 802.11v, IEEE 802.11w-2009, Wi-Fi operating system support, Wi-Fi Protected Access, Wired Equivalent Privacy, Wireless Distribution System, World-Wide Spectrum Efficiency, Xpress technology, IEEE 802.11y-2008 This book explains in-depth the real drivers and workings of IEEE 802.11ac. It reduces the risk of your technology, time and resources investment decisions by enabling you to compare your understanding of IEEE 802.11ac with the objectivity of experienced professionals.

Are all Wireless LANs equal? A network administrator is faced with a plethora of wireless services, complex radio issues, and products for wireless data. There are brand new protocols and products that could become obsolete a day after installation! Over 40% of all deployed WLANs do not even have minimum security activated, exposing the company's network and records to easy outsider access. The WLAN industry is characterized by rapidly changing, incomplete or proprietary standards, which can impact interoperability goals. There are complicated ownership costs, performance limitations, and security configurations that exist for WLANs which many network administrators may not understand or know how to compare. This dissertation presents a decision support system (DSS) that enables a novice network administrator to compare WLAN protocol capabilities, rank security configurations, rate IT cost efforts and use an extensive feature list. An in-depth discussion, concerning WLAN protocols, virtual private networks (VPNs), various encryption algorithms, 802.1X authentication mechanisms, and compilation of network selection criteria provides the foundation to construct a small DSS to aid WLAN network administrators. The DSS uses a set of rules to evaluate a series of potential requirements and provides pertinent WLAN decision-making information. The DSS environment allows a number of specific what-if scenarios to be reviewed and compared; multiple solutions can be tried without having to deal with the consequences. Alternative technologies are listed by the DSS to educate the decision maker about other options.

Fiber-Wireless Convergence in Next-Generation Communication Networks

Wi-Fi Above 100 Mbps

Advances on P2P, Parallel, Grid, Cloud and Internet Computing

Contributions to the Evolution of Next Generation WLANs

Wi-Fi at Gigabit and Beyond