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Recent Developments in Computing and Its Applications - M. Afshar Alam 2009
This book comprises of 74 contributions from the

experts covering the following topics. " Information Communication Technologies " Network Technologies " Wireless And Sensor

Networks " Soft Computing " Circuits and Systems " Software Engineering " Data Mining " Bioinformatics " Data and Network Security
Media Networks - Hassnaa Moustafa 2016-04-19 A rapidly growing number of services and applications along with a dramatic shift in users' consumption models have made media networks an area of increasing importance. Do you know all that you need to know?Supplying you with a clear understanding of the technical and deployment challenges, Media Networks: Architectures, Applications, and Standard

Internet Technologies for Fixed and Mobile Networks - Toni Janevski 2015-11-01
The convergence of legacy telecommunications towards the Internet and Internet technologies is an ongoing process, resulting in converged Telecom and Internet worlds. Based on current and developing industry practice, this book focuses on the Internet technologies, in particular, on Internet principles, protocols, and services for fixed and mobile networks, including

technologies, regulation, and business aspects. This timely resource provides readers with all-around coverage of standardized Internet technologies, Internet standardization regarding the Telecom sector, as well as the convergence of all services onto the Internet. This includes legacy telecommunication services, legacy Internet services, and emerging over-the-top services such as Skype, which appeared during the past decade on a global scale, driven by the penetration of fixed broadband and mobile broadband.

Securing VoIP Networks - Peter Thermos 2007-08-01
In Securing VoIP Networks, two leading experts systematically review the security risks and vulnerabilities associated with VoIP networks and offer proven, detailed recommendations for securing them. Drawing on case studies from their own fieldwork, the authors address VoIP security from the perspective of real-world network implementers, managers, and security

specialists. The authors identify key threats to VoIP networks, including eavesdropping, unauthorized access, denial of service, masquerading, and fraud; and review vulnerabilities in protocol design, network architecture, software, and system configuration that place networks at risk. They discuss the advantages and tradeoffs associated with protection mechanisms built into SIP, SRTP, and other VoIP protocols; and review key management solutions such as MIKEY and ZRTP. Next, they present a complete security framework for enterprise VoIP networks, and provide detailed architectural guidance for both service providers and enterprise users. 1 Introduction 2 VoIP Architectures and Protocols 3 Threats and Attacks 4 VoIP Vulnerabilites 5 Signaling Protection Mechanisms 6 Media Protection Mechanisms 7 Key Management Mechanisms 8 VoIP and Network Security Controls 9 A Security Framework for Enterprise VoIP Networks 10 Provider Architectures and Security 11 Enterprise Architectures and Security

Enabling Technologies and Architectures for Next-Generation Networking Capabilities - Elkhodr, Mahmoud 2018-10-19 With the rise of mobile and wireless technologies, more sustainable networks are necessary to support communication. These next-generation networks can now be utilized to extend the growing era of the Internet of Things. Enabling Technologies and Architectures for Next-Generation Networking Capabilities is an essential reference source that explores the latest research and trends in large-scale 5G technologies deployment, software-defined networking, and other emerging network technologies. Featuring research on topics such as data management, heterogeneous networks, and spectrum sensing, this book is ideally designed for computer engineers, technology developers, network administrators and researchers, professionals, and graduate-level

students seeking coverage on current and future network technologies.

Next Generation Telecommunications Networks, Services, and Management - Thomas Plevyak 2011-09-20
An unprecedented look into the present and future of next generation networks, services, and management in the telecommunications industry The telecommunications industry has advanced in rapid, significant, and unpredictable ways into the twenty-first century. Next Generation Telecommunications Networks, Services, and Management guides the global industry and academia even further by providing an in-depth look at current and developing trends, as well as examining the complex issues of developing, introducing, and managing cutting-edge telecommunications technologies. This is an orchestrated set of original chapters written expressly for this book by topic experts from around the globe. It addresses next generation technologies and architectures, with the focus on networks, services, and management. Key topics include: Opportunities and challenges of next generation telecommunications networks, services, and management Tri/Quad Play and IP-based networks and services Fault, Configuration, Accounting, Performance, and Security (FCAPS) requirements Convergence and an important convergence vehicle, IP Multimedia Subsystem (IMS) Next generation operations and network management architecture Ad hoc wireless and sensor networks and their management Next generation operations and network management standards from a strategic perspective A defining look at the future in this field This book will serve as a contemporary reference for the growing global community of telecommunication and information professionals in industry, government, and academia. It will be important to faculty and graduate students of telecommunications as a graduate textbook. *Handbook of Research on Heterogeneous Next*

Generation Networking: Innovations and Platforms - Kotsopoulos, Stavros 2008-10-31
"This book presents state-of-the-art research, developments, and integration activities in combined platforms of heterogeneous wireless networks"--Provided by publisher.

Advanced Internet Protocols, Services, and Applications - Eiji Oki 2012-03-19
Today, the internet and computer networking are essential parts of business, learning, and personal communications and entertainment. Virtually all messages or transactions sent over the internet are carried using internet infrastructure- based on advanced internet protocols. Advanced internet protocols ensure that both public and private networks operate with maximum performance, security, and flexibility. This book is intended to provide a comprehensive technical overview and survey of advanced internet protocols, first providing a solid introduction and going on to discuss internetworking technologies, architectures and protocols. The book also shows application of the concepts in next generation networks and discusses protection and restoration, as well as various tunnelling protocols and applications. The book ends with a thorough discussion of emerging topics.

Networks of the Future - Mahmoud Elkhodr 2017-10-16
With the ubiquitous diffusion of the IoT, Cloud Computing, 5G and other evolved wireless technologies into our daily lives, the world will see the Internet of the future expand ever more quickly. Driving the progress of communications and connectivity are mobile and wireless technologies, including traditional WLANs technologies and low, ultra-power, short and long-range technologies. These technologies facilitate the communication among the growing number of connected devices, leading to the generation of huge volumes of data. Processing and analysis of such "big data" brings about many opportunities, as well as many challenges,

such as those relating to efficient power consumptions, security, privacy, management, and quality of service. This book is about the technologies, opportunities and challenges that can drive and shape the networks of the future. Written by established international researchers and experts, Networks of the Future answers fundamental and pressing research challenges in the field, including architectural shifts, concepts, mitigation solutions and techniques, and key technologies in the areas of networking. The book starts with a discussion on Cognitive Radio (CR) technologies as promising solutions for improving spectrum utilization, and also highlights the advances in CR spectrum sensing techniques and resource management methods. The second part of the book presents the latest developments and research in the areas of 5G technologies and Software Defined Networks (SDN). Solutions to the most pressing challenges facing the adoption of 5G technologies are also covered, and the new paradigm known as Fog Computing is examined in the context of 5G networks. The focus next shifts to efficient solutions for future heterogeneous networks. It consists of a collection of chapters that discuss self-healing solutions, dealing with Network Virtualization, QoS in heterogeneous networks, and energy efficient techniques for Passive Optical Networks and Wireless Sensor Networks. Finally, the areas of IoT and Big Data are discussed, including the latest developments and future perspectives of Big Data and the IoT paradigms.

NGN Architectures, Protocols and Services - Toni Janevski 2014-03-06 Comprehensive coverage explaining the correlation and synergy between Next Generation Networks and the existing standardized technologies This book focuses on Next Generation Networks (NGN); in particular, on NGN architectures, protocols and services, including technologies, regulation and business aspects. NGN provides convergence between the

traditional telecommunications and the Internet, and it is globally standardized by the ITU (International Telecommunication Union), where ITU is the United Nations specialized agency for Information and Communication Technologies – ICTs. The convergence towards the NGN is based on the Internet technologies, and the introductory chapters cover the Internet fundamentals of today, including architectures, protocols (IPv4, IPv6, TCP, DNS, etc.), Internet services (WWW, e-mail, BitTorrent, Skype, and more), as well as Internet governance. Further, the prerequisite for convergence of all ICT services over single network architectures is broadband access to the Internet. Hence, the book includes architectures of fixed broadband Internet access networks, such as DSL (Digital Subscriber Line) networks, cable networks, FTTH (Fiber To The Home), next generation passive and active optical networks, and metro Ethernet. It also covers network architectures for next generation (4G) mobile and wireless networks (LTE/LTE-Advanced, and Mobile WiMAX 2.0), then Fixed Mobile Convergence - FMC, next generation mobile services, as well as business and regulatory aspects for next generation mobile networks and services. Comprehensive coverage explaining the correlation and synergy between Next Generation Networks and the existing standardized technologies Focuses on Next Generation Networks (NGN) as defined by the ITU, including performance, service architectures and mechanisms, common IMS (IP Multimedia Subsystem), control and signalling protocols used in NGN, security approaches, identity management, NGN Service Overlay Networks, and NGN business models Examines the most important NGN services, including QoS-enabled VoIP, IPTV over NGN, web services in NGN, peer-to-peer services, Ubiquitous Sensor Network (USN) services, VPN services in NGN, Internet of things and web of things Includes the transition towards NGN from the

PSTN (Public Switched Telephone Networks) and from the best-effort Internet via the same Internet access Explores advanced topics such as IPv6-based NGN, network virtualization, and future packet based networks, as well as business challenges and opportunities for the NGN evolved networks and services Essential reading for engineers and employees from regulatory bodies, government organisations, telecommunication companies, ICT companies.

Service Automation and Dynamic Provisioning Techniques in IP / MPLS Environments - Christian Jacquenet 2008-04-15 Save time & resources with this comprehensive guide to automation configuration for the value-added IP services of the future. As the Internet becomes the medium of choice for value-added IP service offerings such as TV broadcasting, videoconferencing, and Voice over IP, the ability of automating configuration processes has become a key challenge for service providers. In fact, this feature has become crucial with the ever-growing level of expertise required to deploy such services and the scope of the techniques that need to be activated in order to provide such services with a guaranteed level of quality. Service Automation and Dynamic Provisioning Techniques in IP/MPLS Environments: Discusses architectures and protocols for services information, covering the state-of-the-art in current implementations of Remote Authentication Dial-In User Service (RADIUS), Diameter, Common Open Policy Service (COPS), Simple Network Management Protocol (SNMP) and NETCONF Explains various application examples, covering the dynamic enforcement of QoS, security, and IP Traffic Engineering policies. Covers the automated production of MPLS-based VPNs. The authors offer an invaluable guide for IT facilitators, network managers, and researchers in industry and academia, as well as students studying advanced IP/MPLS networking communications courses. System designers and

architects will also find this book helpful.

Parallel and Distributed Processing and Applications - ISPA 2005 Workshops - Guihai Chen 2005-10-25

IPTV Delivery Networks - Suliman Mohamed Fati 2018-04-06
A guide to the current technologies related to the delivery process for both live and on-demand services within IPTV delivery networks IPTV Delivery Networks is an important resource thatoffers an in-depth discussion to the IPTV (Internet Protocol Television) delivery networks for both live and on demand IPTV services.This important book also includes a review of the issues and challenges surrounding the delivery of IPTV over various emerging networking and communications technologies. The authors — an international team of experts — introduce a framework for delivery network applicable for live and video-on-demand services. They review the fundamental issues of IPTV delivery networks and explore the QoS (Quality of Service) issue for IPTV delivery networks that highlights the questions of security and anomaly detection as related to quality. IPTV Delivery Networks also contains a discussion of the mobility issues and next-generation delivery networks. This guide captures the latest available and usable technologies in the field and: Explores the technologies related to delivery process for both live (real time) and on demand services in highly accessible terms Includes information on the history, current state and future of IPTV delivery Reviews all the aspects of delivery networks including storage management, resource allocation, broadcasting, video compression, QoS and QoE Contains information on current applications including Netflix (video on demand), BBC iPlayer (time-shifted IPTV) and live (real time) streaming Written for both researchers and industrial experts in the field of IPTV delivery networks. IPTV Delivery Networks is a groundbreaking

book that includes the most current information available on live and on demand IPTV services.
Next Generation Networks - Jingming Li Salina 2008-02-28
Next Generation Networks (NGN) provide ubiquitous connectivity with pervasive accessibility to service, application, content and information. NGN will bring tremendous advantages to companies and individuals, in terms of access to information, education and knowledge, efficiency, dematerialisation and new user experiences. Next Generation Networks: Perspectives and Potentials explores the potentials of NGN and provides an outlook of future services for the end users and opportunities for the traditional network operators and new players. It creates a framework to aid the understanding of NGN, exploring the strategic development and practical deployment of NGN. This book provides a complete and comprehensive picture of the future directions, substantial benefits, issues, applications and services for NGN. Offers an in-depth exploration of NGN covering both basic and advanced concepts Examines critical issues with the implementation of NGN Covers NGN technology, architecture, transport, services, and evolution and standardization. Written by industry experts focusing on the business opportunities of NGN with chapters on NGN standardization, development and corporate responsibility Next Generation Networks is ideal for network operators, equipment vendors, researchers, Telecoms regulators and engineers working in next generation networking. It will also be of interest to graduate students on electrical engineering and computer science programmes with a focus on networks.
Internet of Things, Smart Spaces, and Next Generation Networks and Systems - Olga Galinina 2017-10-03
This book constitutes the joint refereed proceedings of the 17th International

Conference on Next Generation Wired/Wireless Advanced Networks and Systems, NEW2AN 2017, the 10th Conference on Internet of Things and Smart Spaces, ruSMART 2017. The 71 revised full papers presented were carefully reviewed and selected from 202 submissions. The papers of NEW2AN focus on advanced wireless networking and applications; lower-layer communication enablers; novel and innovative approaches to performance and efficiency analysis of ad-hoc and machine-type systems; employed game-theoretical formulations, Markov chain models, and advanced queuing theory; grapheme and other emerging material, photonics and optics; generation and processing of signals; and business aspects. The ruSMART papers deal with fully-customized applications and services. The NsCC Workshop papers capture the current state-of-the-art in the field of molecular a nd nanoscale communications such as information, communication and network theoretical analysis of molecular and nanonetwork, mobility in molecular and nanonetworks; novel and practical communication protocols; routing schemes and architectures; design/engineering/evaluation of molecular and nonoscale communication systems; potential applications and interconnections to the Internet (e.g. the Internet of Nano Things).

Encyclopedia of Internet Technologies and Applications - Freire, Mario 2007-10-31 Provides the most thorough examination of Internet technologies and applications for researchers in a variety of related fields. For the average Internet consumer, as well as for experts in the field of networking and Internet technologies.

Value-Added Services for Next Generation Networks - Thierry Van de Velde 2007-12-13 In the NGN world, no truer words are spoken than "the future is now." And the competition in the information networking arena will only intensify in the next 5-10 years. Choosing the

correct NGN-VAS strategy now will set your company apart. Value Added Services for Next Generation Networks examines the quest for the real added value in modern commu

Multimedia Networking Technologies, Protocols, and Architectures - Ivan Vidal 2019-01-31
This practical resource provides a survey on the technologies, protocols, and architectures that are widely used in practice to implement networked multimedia services. The book presents the background and basic concepts behind multimedia networking, and provides a detailed analysis of how multimedia services work, reviewing the diverse network protocols that are of common use to implement them. To guide the explanation of concepts, the book focuses on a representative set of networked multimedia services with proven success and high penetration in the telecommunication market, namely Internet telephony, Video-on-Demand (VoD), and live IP television (IPTV).

Contents are presented following a stepwise approach, describing each network protocol in the context of a networked multimedia service and making appropriate references to the protocol as needed in the description of other multimedia services. This book also contains questions and exercises to provide the reader with insight on the practical application of the explained concepts. Additionally, a laboratory practice is included, based on open-source tools and software, to analyze the operation of an Internet telephony service from a practical perspective, as well as to deploy some of its fundamental components.

Personal Wireless Communications - Robert Bestak 2007-11-14
The International conference on Personal Wireless Communications (PWC 2007) was the twelfth conference of its series aimed at stimulating technical exchange between researchers, practitioners and students interested in mobile computing and wireless

networks. The program covered a variety of research topics that are of current interest, including Ad-Hoc Networks, WiMAX, Heterogeneous Networks, Wireless Networking, QoS and Security, Sensor Networks, Multicast and Signal processing.

QoS for Fixed and Mobile Ultra-Broadband - Toni Janevski 2019-06-10
Provides extensive coverage of standardized QoS technologies for fixed and mobile ultra-broadband networks and services—bringing together technical, regulation, and business aspects The Quality of Service (QoS) has been mandatory for traditional telecommunication services such as telephony (voice) and television (TV) since the first half of the past century, however, with the convergence of telecommunication networks and services onto Internet technologies, the QoS provision remains a big challenge for all ICT services, not only for traditional ones. This book covers the standardized QoS technologies for fixed and mobile ultra-broadband networks and services, including the business aspects and QoS regulation framework, which all will have high impact on the ICTs in the current and the following decade. QoS for Fixed and Mobile Ultra-Broadband starts by introducing readers to the telecommunications field and the technology, and the many aspects of both QoS and QoE (Quality of Experience). The next chapter devotes itself to Internet QoS, starting with an overview of numerous technology protocols and finishing with business and regulatory aspects. The next three chapters look at QoS in NGN and Future Networks, QoS for fixed ultra-broadband, and QoS for mobile ultra-broadband. The book also provides readers with in-depth accounts of services in fixed and mobile ultra-broadband; broadband QoS parameters, KPIs, and measurements; network neutrality; and the QoS regulatory framework. Comprehensively covers every aspect of QoS technology for fixed and mobile ultra-broadband

networks and services, including the technology, the many regulations, and their applications in business Explains how the QoS is transiting from the traditional telecom world to an all-IP world Presents all the fundamentals of QoS regulation, as well as SLA regulation QoS for Fixed and Mobile Ultra-Broadband is an excellent resource for managers, engineers, and employees from regulators, ICT government organizations, telecommunication companies (operators, service providers), ICT companies, and industry. It is also a good book for students and professors from academia who are interested in understanding, implementation, and regulation of QoS for fixed and mobile ultra-broadband.

Advancements and Innovations in Wireless Communications and Network Technologies - Bartolacci, Michael 2012-10-31 The constant advancements of wireless technologies have influenced modern business practices as well as social interaction. As a result, the continuing study of communications and networking is important to better understand existing modes of information transfer, as well as developing and managing new methods. Advancements and Innovations in Wireless Communications and Network Technologies is a collection of research and case studies which tackle the issues, advancements and techniques on wireless communications and network technologies. This book offers expansive knowledge and different perspectives useful for researchers and students alike.

Next Generation and Advanced Network Reliability Analysis - Syed Riffat Ali 2018-11-19 This book covers reliability assessment and prediction of new technologies such as next generation networks that use cloud computing, Network Function Virtualization (NVF), Software Defined Network (SDN), Next Generation Transport, Evolving Wireless Systems, Digital VoIP Telephony, and Reliability Testing techniques specific to Next Generation Networks

(NGN). This book introduces the technology to the reader first, followed by advanced reliability techniques applicable to both hardware and software reliability analysis. The book covers methodologies that can predict reliability using component failure rates to system level downtimes. The book's goal is to familiarize the reader with analytical techniques, tools and methods necessary for analyzing very complex networks using very different technologies. The book lets readers quickly learn technologies behind currently evolving NGN and apply advanced Markov modeling and Software Reliability Engineering (SRE) techniques for assessing their operational reliability. Covers reliability analysis of advanced networks and provides basic mathematical tools and analysis techniques and methodology for reliability and quality assessment; Develops Markov and Software Engineering Models to predict reliability; Covers both hardware and software reliability for next generation technologies.

The Future of Wireless Networks - Mohesen Guizani 2015-09-22
The exponential increase in mobile device users and high-bandwidth applications has pushed the current 3G and 4G wireless networks to their capacity. Moreover, it is predicted that mobile data traffic will continue to grow by over 300 percent by 2017. To handle this spectacular growth, the development of improved wireless networks for the future ha

Converged Multimedia Networks - Juliet Bates 2006-08-30
This book focuses largely on enabling technologies for network convergence. A principal aim is to show where parallel functions exist in fixed and mobile voice network architectures and to explain how these functions will be combined. The authors describe the components of a future converged architecture and consider the following key aspects: QoS Requirements, Proposed Solution Architectures, Protocol and Interface options, Underlying

Network Issues and Security issues. The book also compares and describes initiatives from several standards bodies working to simplify to a clean architecture and a common set of protocols. The impact on a Multi Protocol Label Switching (MPLS) network, the preferred method of transport for the core network, will be considered in detail.

Media Convergence Handbook - Vol. 1 - Artur Lugmayr 2015-11-20
The Media Convergence Handbook sheds new light on the complexity of media convergence and the related business challenges. Approaching the topic from a managerial, technological as well as end-consumer perspective, it acts as a reference book and educational resource in the field. Media convergence at business level may imply transforming business models and using multiplatform content production and distribution tools. However, it is shown that the implementation of convergence strategies can only succeed when expectations and aspirations of every actor involved are taken into account. Media consumers, content producers and managers face different challenges in the process of media convergence. Volume I of the Media Convergence Handbook encourages an active discourse on media convergence by introducing the concept through general perspective articles and addressing the real-world challenges of conversion in the publishing, broadcasting and social media sectors.

Architecture and Governance for Communication Services - Noël Crespi 2013-04-08
Communication services are evolving at an unprecedented rate. Nolonger limited to interpersonal vocal communication, they nowintegrate functions such as address books, content sharing andmessaging. The emergence of social networks – which may alsoinclude these features – is an important element of thistransformation. Content services are

becoming flagship servicesthemselves, and are sometimes paired up with conversation services.The boundaries between different services are becoming less andless distinct. This book meets the need for a better understandingof communication services, and for a general framework of theirdescription. A detailed overview on service architecture in theTelco, Web and IT worlds is presented, offering a roadmap withexplanations on how to improve the architecture and governance ofcommunication service architectures by exploiting the syntax andsemantics that are common to different services is clearlyoutlined. This book also responds to recurring questions aboutservice design, such as the functional scope of enablers or SOA(Service Oriented Architecture) services, the relevance of servicecomposition to the user and collaboration between differentservices in a converged environment. Many concrete examples fromtelecoms service providers' operations illustrate theseconcepts. Contents 1. Describing Service Architectures. 2. Convergence of Service. 3. Building an Architectural Framework for Telecom Services. 4. Modeling and Case Study. 5. Organizational and Software Applications. About the Authors Emmanuel Bertin is senior service architect at Orange Labs inFrance. He is the author of more than 40 research papers, and holdsmore than 10 patents in the area of communication services. Noël Crespi worked at Bouygues Telecom, France TelecomR&D, and then at Nortel Networks where he led the TelephonyProgramme. He is currently Professor and Head of the ServiceArchitecture Laboratory at Institut Mines-Telecom, Telecom SudParisin France and is the author/co-author of more than 160 researchpapers and 140 contributions in standardization.

Emerging Wireless Technologies and the Future Mobile Internet - Dipankar Raychaudhuri 2011-03-07

This book provides a preview of emerging wireless technologies and their architectural impact on the future mobile Internet. The reader will find an overview of architectural considerations for the mobile Internet, along with more detailed technical discussion of new protocol concepts currently being considered at the research stage. The first chapter starts with a discussion of anticipated mobile/wireless usage scenarios, leading to an identification of new protocol features for the future Internet. This is followed by several chapters that provide in-depth coverage of next-generation wireless standards, ad hoc and mesh network protocols, opportunistic delivery and delay tolerant networks, sensor network architectures and protocols, cognitive radio networks, vehicular networks, security and privacy, and experimental systems for future Internet research. Each of these contributed chapters includes a discussion of new networking requirements for the wireless scenario under consideration, architectural concepts and specific protocol designs, many still at research stage.

Next Generation Network Services - Neill Wilkinson 2002-04-26
'Next Generation' refers to the new technologies and services that telecommunications operators will have at their disposal as they create new 3G networks where voice and data converge and which are based on packet switched rather than circuit switched telephony. Providing a much needed overview of the latest communication technologies and describing the influences of the so-called "next generation" networks on telecommunication operators' environments, this text begins with a very brief history of telecommunications, and explains how the advent of the internet has changed the way people think about communications. The book is split into three parts: 1. Technologies: Describes the different technologies that are influencing the change from circuit switched to packet

switched telephony. Covers Media Gateway Control (MEGACO), application service provision, models for management, mobile and fixed technologies such as Digital Subscriber Line and GPRS. 2. Services: Explains the new services that are made possible by the new technologies, and how they improve on current services. This section also brings in important techniques from software engineering (such as application frameworks) and shows how they may be used to create flexible network architectures. 3. Going Forward: The effects of all the recent changes on the telecommunications operators, and how it is possible to capitalise on this. Roadmaps provide a picture of the state of the industry in six months, one year and three years' time. * Presents overviews of all the new technologies and services, demonstrating how they interrelate * Written by a consultant with a wide experience of installing networks, as well as advising on network strategies for companies including Marconi, BT, IPL, Mercury, BTCellnet and Cable & Wireless * Coverage includes Internet connectivity, e-commerce, call centres, application service provision, UMTS, WAP, billing, security and directory enable networks A leading edge reference resource for telecommunications network managers, network strategists and designers.

Next-Generation Internet - Byrav Ramamurthy 2011-02-03
With ever-increasing demands on capacity, quality of service, speed, and reliability, current Internet systems are under strain and under review. Combining contributions from experts in the field, this book captures the most recent and innovative designs, architectures, protocols, and mechanisms that will enable researchers to successfully build the next-generation Internet. A broad perspective is provided, with topics including innovations at the physical/transmission layer in wired and wireless media, as well as the support for new switching

and routing paradigms at the device and sub-system layer. The proposed alternatives to TCP and UDP at the data transport layer for emerging environments are also covered, as are the novel models and theoretical foundations proposed for understanding network complexity. Finally, new approaches for pricing and network economics are discussed, making this ideal for students, researchers, and practitioners who need to know about designing, constructing, and operating the next-generation Internet.
Network Convergence - Hu Hanrahan 2007-03-13
The present information age is enabled by telecommunications and information technology and the continued convergence of their services, technologies and business models. Within telecommunications, the historic separations between fixed networks, mobile telephone networks and data communications are diminishing. Similarly, information technology and enterprise communications show convergence with telecommunications. These synergies are captured in the concept of Next Generation Networks that result from evolution to new technologies, enabling new services and applications. Network Convergence creates a framework to aid the understanding of Next Generation Networks, their potential for supporting new and enhanced applications and their relationships with legacy networks. The book identifies and explains the concepts and principles underlying standards for networks, services and applications. Network Convergence: Gives comprehensive coverage of packet multimedia, enterprise networks, third generation mobile communications, OSA/Parlay and developments in fixed networks. Gives an integrated view of diverse information and communications systems and technology through a common NGN Framework. Delves into protocols, APIs and software processes for supporting services and applications in advanced networks. Discusses a variety of

applications of telecommunications supporting IT and IT enhanced by communications. Follows developments in operations support systems standards and links these to next generation networks. Includes a wealth of examples, use cases, tables and illustrations that help reinforce the material for students and practitioners. Features an accompanying website with PowerPoint presentations, glossary, web references, tutorial problems, and 'learn more' pages. This essential reference guide will prove invaluable to advanced undergraduate and graduate students, academics and researchers. It will also be of interest to professionals working for telecommunications network operators, equipment vendors, telecoms regulators, and engineers who wish to further their knowledge of next generation networks.
Value-Added Services for Next Generation Networks - Thierry Van de Velde 2007-12-13
In the NGN world, no truer words are spoken than "the future is now." And the competition in the information networking arena will only intensify in the next 5-10 years. Choosing the correct NGN-VAS strategy now will set your company apart. Value Added Services for Next Generation Networks examines the quest for the real added value in modern commu
IP Communications and Services for NGN - Johnson I Agbinya 2009-12-23
Rapid deployment and acceptance of broadband networks, including the 802.11 a/b/g, 3G cellular networks, WiMAX, and emerging 4G cellular IP networks, have sparked a growing reliance on voice over IP and the quickly emerging IP TV and Mobile TV. Providing the necessary background and technical understanding to stay abreast of and even ahead of the IP trend, IP Communications and Services for NGN explores IP development for the delivery of next generation mobile services. Packed with detailed illustrations, this cutting-edge reference examines the primary IP protocols (IPv4 and IPv6), real-time protocols, and three major IP

services (VoIP, IPTV, and Mobile TV). It clearly explains the different architectures of fixed, mobile, and wireless networks along with the major advantages and disadvantages of each. It includes coverage of the latest in: The VoIP Market SCTP and Vertical Handoff RSVP: Resource Reservation Protocol MPLS: MultiProtocol Label Switching SIP: Session Initiation Protocol IMS: IP Multimedia Subsystem RTSP: Real-Time Streaming Protocol RTP: Real-Time Transport Protocol IPTV System Architectures and IPTV System Descriptions With a detailed listing of commonly used acronyms, along with a clear description of the role IP is likely to play in the development of next generation mobile services, this book provides educators, industry practitioners, regulators, and subscribers with the ideal starting point for developing the understanding required to deploy, train, and use IP services effectively and efficiently.
Performance Optimization of IP Multimedia Subsystem - Mlindi Mashologu 2010-06-18
The IP Multimedia Subsystem (IMS) is the basic network architecture for Next Generation Networks (NGN) which is intended to bridge the divide between the traditional circuit switched and packet switched networks, thereby providing a single network capable of providing all service offerings. IMS is based on the IP infrastructure and it enables the convergence of data, speech and video on the same network platform. The IMS forms the basis of Fixed Mobile Convergence (FMC), where fixed-line operators are striving to provide mobile access and mobile operators are trying to provide fixed access. This is done to provide both services to a customer in a single device. The IMS is based on Session Initiation Protocol (SIP), which is a text-based protocol. The IMS will generally create additional signaling traffic in the IP based networks, so there is a need to take necessary precautions to minimize the signaling overload. This research is based on how the performance

of the IMS can be improved by optimization of SIP as well as IMS elements. An analysis and characterization of the signaling traffic generated by IMS has been performed and how the signaling traffic can be reduced by the compression of SIP using the Burrows Wheeler Transform (BWT) has been explored. The queuing models of the IMS have been formulated and the mathematical approach has been used to find the impact of implementing the Hyper-Threading technology on the IMS Elements.

Networking Services - Harry Perros 2014-02-13
Networking ServicesQoS, Signaling, Processes Harry PerrosThe book has been structured around the Next Generation Network (NGN) framework, which separates the transport network, services, and signaling protocols into the service stratum and the transport stratum. The service stratum is the control plane for the establishment of networking sessions, and the transport stratum is the data plane over which the data of a networking service is transported. Within this context, the author explains in detail the signaling protocols used in the service stratum for setting up networking services, and the Quality of Service (QoS) architectures used in the transport network to guarantee QoS. Networking Services:• Provides a systematic coverage of the signaling and QoS architectures for networking services.• Explains topics such as SIP, IMS, MPLS, DiffServ, LDP, RSVP-TE, congestion control, RACF, and VPNs.• Describes IMS-based architectures for popular networking services such as VoIP, presence, instant messaging, video conferencing, multimedia telephony, IPTV, and service and device continuity.• Describes queueing theory and simulation techniques used to dimension the capacity of a networking service.• Illustrates the material with problems and projectsNetworking Service is a textbook for graduate and senior undergraduate students in computer science and

computer engineering, and also a reference book for networking engineers.

System Engineering for IMS Networks - Arun Handa 2009-03-12

The IMS is the foundation architecture for the next generation of mobile phones, wireless-enabled PDAs, PCs, and the like. IMS delivers multimedia content (audio, video, text, etc.) over all types of networks. For network engineers/administrators and telecommunications engineers it will be essential to not only understand IMS architecture, but to also be able to apply it at every stage of the network design process. This book will contain pragmatic information on how to engineer IMS networks as well as an applications-oriented approach for the engineering and networking professionals responsible for making IMS function in the real world. * Describes the convergence of wireless IMS (IP Multimedia Subsystem) with other networks, including wireline and cable *

Discusses building interfaces for end users and IMS applications servers * Explores network management issues with IMS

Pervasive Computing Paradigms for Mental Health - Nuria Oliver 2018-02-28

This book constitutes the refereed proceedings of the 6th International Symposium on Pervasive Computing Paradigms for Mental Health, MindCare 2016, held in Barcelona, Spain, in November 2016, and the Second International Conference of Future Access Enablers of Ubiquitous and Intelligent Infrastructures, Fabulous 2016, Belgrade, Serbia, October 24-26, 2016, and the Third International Conference on Interoperability in IoT, IIoT 2015, Rome, Italy, October 26-27, 2015. The 24 papers were selected from 32 submissions. MindCare presents technologies in favor of maintaining and improving psychological well-being. Fabulous presents broad areas of future wireless networks, ambient and assisted living and smart infrastructures in order to interact, exchange

ideas, expertise, experience and know-how. And finally IIoT presents tools and services in home automation and industrial service.

Value-Added Services for Next Generation Networks - Taylor & Francis Group 2019-08-30 In the NGN world, no truer words are spoken than "the future is now." And the competition in the information networking arena will only intensify in the next 5-10 years. Choosing the correct NGN-VAS strategy now will set your company apart. Value Added Services for Next Generation Networks examines the quest for the real added value in modern communication systems. The author covers more than just the technology itself, but also examines how it is being used and how it could be used to gain a strategic advantage. The book starts with a SOTW analysis for PSTN/GSM operators and new entrants and the threats they will undoubtedly face. The author examines the fundamentals of genuine communication services and the service providers' starting position, then takes you on a tour through the landscape of NGN standards, contrasting the 3GPP IMS architecture with that of IETF, UMA, and OMA. He discusses practical ways to build an NGN SDP and the essential business aspects involved in this enterprise. The book highlights how, technically, the NGN can be interconnected, or glued, to the existing GSM/PSTN infrastructure, justifying the choice of protocols and network architecture. It also describes general concepts, architectural requirements, and technologies in modern VAS platform and new VAS for the NGN in terms of network implementation, end user experience, business scope, and cost/revenue projections. But is NGN just a game of investments in equipment, of CAPEX and OPEX savings? Is the so-called triple play just a matter of marketing, partnerships, and mergers? How will the market play out? Where will the NGN and VAS ultimately go? And more importantly, what is your NGN-VAS strategy? By addressing these

questions and more, this book prepares you for success in the emerging telecommunications environment.

IP Multimedia Subsystem (IMS) Handbook - Mohammad Ilyas 2018-10-03
Take Part in the Future of Wireless/Wireline Convergence The IP multimedia subsystem (IMS), established as the foundation for future wireless and wireline convergence, is the bedrock that will facilitate easy deployment on new, rich, personalized multimedia communication services that mix telecom and data services. Designers, planners, and researchers of communication systems will need to make full use of the technology occurring with this convergence if they want to be the ones providing end users with new and efficient services that are as cost-effective as they are innovative. To provide researchers and technicians with the tools they need to optimize their role in this communication revolution, the IP Multimedia Subsystem (IMS) Handbook presents all the technical aspects of the IMS needed to support the growth of digital traffic and the implementation of underlying networks. This guide covers everything from basic concepts to research-grade material, including the future direction of the architecture. Organized in three sections, the book brings together the technical savvy of 50 pioneering experts from around the world, providing complete coverage of relevant concepts, technologies, and services. Learn How IMS Will Speed Innovation Filling the gap between existing traditional telecommunications and Internet technologies, IMS has led to an environment in which new services and concepts are introduced more quickly than ever before, such as reusable service components and real-time integration. The technology promises to be a cost-effective evolutionary path to future wireless and wireline convergences that will meet next-generation service requirements.
QoS for Fixed and Mobile Ultra-Broadband -

Toni Janevski 2019-03-13
Provides extensive coverage of standardized QoS technologies for fixed and mobile ultra-broadband networks and services—bringing together technical, regulation, and business aspects The Quality of Service (QoS) has been mandatory for traditional telecommunication services such as telephony (voice) and television (TV) since the first half of the past century, however, with the convergence of telecommunication networks and services onto Internet technologies, the QoS provision remains a big challenge for all ICT services, not only for traditional ones. This book covers the standardized QoS technologies for fixed and mobile ultra-broadband networks and services, including the business aspects and QoS regulation framework, which all will have high impact on the ICTs in the current and the following decade. QoS for Fixed and Mobile Ultra-Broadband starts by introducing readers to the telecommunications field and the technology, and the many aspects of both QoS and QoE (Quality of Experience). The next chapter devotes itself to Internet QoS, starting with an overview of numerous technology protocols and finishing with business and regulatory aspects. The next three chapters look at QoS in NGN and Future Networks, QoS for fixed ultra-broadband, and QoS for mobile ultra-broadband. The book also provides readers with in-depth accounts of services in fixed and mobile ultra-broadband; broadband QoS parameters, KPIs, and measurements; network neutrality; and the QoS regulatory framework. Comprehensively covers every aspect of QoS technology for fixed and mobile ultra-broadband networks and services, including the technology, the many regulations, and their applications in business Explains how the QoS is transiting from the traditional telecom world to an all-IP world Presents all the fundamentals of QoS regulation, as well as SLA regulation QoS for Fixed and Mobile Ultra-Broadband is an excellent resource

for managers, engineers, and employees from regulators, ICT government organizations, telecommunication companies (operators, service providers), ICT companies, and industry. It is also a good book for students and professors from academia who are interested in understanding, implementation, and regulation of QoS for fixed and mobile ultra-broadband.
IMS - Khalid Al-Begain 2009-08-19 Providing an holistic approach to IMS technologies, IMS: A Development and Deployment Perspective explores service architecture for development and delivery of IMS services. Approaching IMS from the perspective of the user and the service provider it examines both the current state of deployment and future trends. The book offers a realistic view of IMS deployment to operators and service providers, giving practical examples, application cases and business models. It also presents IMS deployment strategies based on real-life deployment statistics from a live IMS test bed connected to an operator network and proof-of-concept applications including inter-operability trials and results. Focusing on IMS potential in terms of service creation, service composition and service provision the book discusses the ability of IMS to act not only as a service delivery framework, but also as a service integration framework. It presents the possible future of IMS in terms of convergence with Internet services, including discussions about integration with web technologies including the WIMS 2.0 initiative. The book enables a better understanding of how web technologies can complement the IMS service architecture and pioneer the post-IMS progress and success. Presents a novel service-oriented approach to IMS services and applications from a deployment perspective Places IMS in the context of the current telecom environment providing business models through WIMS 2.0 initiative Predicts the trends and potential future for the IMS evolution Provides a technical

foundation to IMS principles and architecture Gives examples and solutions to the challenges of service creation and implementation and analyses deployment hurdles and interoperability trials Describes trends of convergence based on IMS and Web technologies