Wireless Multimedia Network Technologies The Springer International Series In Engineering And Computer Science

The International Conference on Communications, Management, and Information Technology (ICCMIT'16) provides a discussion forum for scientists, engineers, educators and students about the latest discoveries and realizations in the foundations, theory, models and applications of systems inspired on nature, using computational intelligence methodologies, as well as in emerging areas related to the three tracks of the conference: Communication Engineering, Knowledge, and Information Technology. The best 25 papers to be included in the book will be carefully reviewed and selected from numerous submissions, then revised and expanded to provide deeper insight into trends shaping future ICT.

This book constitutes the proceedings of the 15th International Conference on Ad Hoc Networks and Wireless, ADHOC-NOW 2016, held in Lille, France in July 2016. The 23 full papers presented together with one short paper in this volume were carefully reviewed and selected from 64 submissions. The contributions are organized in topical sections named: resource allocation, theory and communications, PHY/MAC/routing in sensors/IoT, DTN/opportunistic networks, sensors/IoT, security, VANET and ITS, and robots and MANETs.

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

Social networking is a concept that has existed for a long time; however, with the explosion of the Internet, social networking has become a tool for people to connect and communicate in ways that were impossible in the past. The recent development of Web 2.0 has provided many new applications, such as Myspace, Facebook, and LinkedIn. The purpose of Handbook of Social Network Technologies and Applications is to provide comprehensive guidelines on the current and future trends in social network technologies and applications in the field of Web-based Social Networks. This handbook includes contributions from world experts in the field of social networks from both academia and private industry. A number of crucial topics are covered including Web and software technologies and communication technologies for social networks. Web-mining techniques, visualization techniques, intelligent social networks, Semantic Web, and many other topics are covered. Standards for social networks, case studies, and a variety of applications are covered as well.

This book contains the refereed proceedings of the 3rd International IFIP-TC6 Networking Conference, Networking 2004. Conferences in the Networking series span the interests of several distinct, but related, TC6 working groups, including Working Groups 6.2, 6.3, and 6.8. Re?ecting this, the conference was structured

with three Special Tracks: (i) Networking Technologies, Services, and Protocols; (ii) Performance of Computer and Communication Networks; and (iii) Mobile and Wireless Communications. However, beyond providing a forum for the presentation of high-quality - search in various complementary aspects of networking, the conference was also targetedtocontributingtoauni?edviewofthe?eldandtofosteringtheinter- tion and exchange of fruitful ideas between the various related (and overlapping) specialized subcommunities therein. Towards this second objective, more than a few conference sessions (and thematic sections in this book) 'cut across' the Special Tracks, along more generic or fundamental concepts. Networking 2004 was fortunate to attract very high interest among the c- munity, and the conference received 539 submissions from 44 countries in all ?ve continents. These ?gures correspond to a remarkable increase in subm- sions from the previous very successful events (roughly, a 156% increase over Networking 2000 and 71% over Networking 2002), and indicate that Netw- king conferences are progressively becoming established as worldwide reference events in the ?eld. "This book provides a central source of reference on visual information processing in wireless sensor network environments and its technology, application, and society issues"--

During 12-15 of September 1999, 10th International Symposium on P- sonal, Indoor and Mobile Radio Communications (PIMRC'99) was held in Osaka Japan, and it was really a successful symposium that accommodated more than 600 participants from more than 30 countries and regions. PIMRC is really well organized annual symposium for wireless multimedia commu- cation systems, in which, various up-to-date topics are discussed in the invited talk, panel discussions and tutorial sessions. One of the unique features of the PIMRC is that PIMRC is continuing to publish, from Kluwer Academic Publishers since 1997, a book that collects the hottest topics discussed in PIMRC. In PIMRC'97, Invited talks were sum- rized in "Wireless Communications –TDMA versus CDMA – (ISBN 0-7923- 8005-3)," and it was published just beforePIMRC'97. This book was also distributed to all the PIMRC'97 participants as a part of proceedings for the conference. In PIMRC'98, extendedversion of the invited papers were s- marized in Wireless Multimedia Network Technologies (ISBN 0-7923-8633- 7) and published in September 1999, which is almost the same timing for the PIMRC'99. In the case of PIMRC'99, to produce more informative book, we have - lected topics that attracted many PIMRC'99 participants during the conf- ence, and invited prospective authors not only from the invited speakers but also from tutorial speakers, panel organizers, panelists, and some other exc- lent PIMRC'99 participants.

Europe's leading experts from industry and academia present the results of the research into advanced mobile technologies and services performed within the scope of the ACTS R& D program in two new book volumes. Invaluable for industry professionals and researchers, the state-of-the-art in European R& D

into wireless technologies is detailed in these two works.

Multimedia over IP and Wireless Networks is an indispensable guide for professionals or researchers working in areas such as networking, communications, data compression, multimedia processing, streaming architectures, and computer graphics. Beginning with a concise overview of the fundamental principles and challenges of multimedia communication and networking, this book then branches off organically to tackle compression and networking next before moving on to systems, wireless multimedia and more advanced topics. The Compression section advises on the best means and methodology to ensure multimedia signal (images, text, audio and data) integrity for transmissions on wireless and wired systems. The Networking section addresses channel protection and performance. In the Systems section, the focus is on streaming media on demand, live broadcast and video and voice's role in real-time communication. Wireless multimedia transmission and Quality of Service issues are discussed in the Wireless Multimedia section. An Advanced Topics section concludes the book with an assortment of topics including Peer-to-Peer multimedia communication and multipath networks. Up-to-date coverage of existing standards for multimedia networking Synergistic tutorial approach reinforces knowledge gained in previous chapters Balanced treatment of audio and video with coverage of end-to-end systems

This book is part of a three volume set that constitutes the refereed proceedings of the 4th International Symposium on Neural Networks, ISNN 2007, held in Nanjing, China in June 2007. Coverage includes neural networks for control applications, robotics, data mining and feature extraction, chaos and synchronization, support vector machines, fault diagnosis/detection, image/video processing, and applications of neural networks. This book is a collection of invited papers that were presented at the Ninth IEEE International Symposium on Personal, Indoor and Mobile Radio Communications, September 5-8, 1998, Boston, MA. These papers are meant to provide a global view of the emerging third-generation wireless networks in the wake of the third millennium. Following the tradition of the PIMRC conferences, the papers are selected to strike a balance between the diverse interests of academia and industry by addressing issues of interest to the designers, manufacturers, and service providers involved in the wireless networking industry. The tradition of publishing a collection of the invited papers presented at the PIMRC started in PIMRC'97, Helsinki, Finland. There are two benefits to this tradition (1) it provides a shorter version of the proceedings of the conference that is more focused on a specific theme (2) the papers are comprehensive and are subject of a more careful review process to improve the contents as well as the presentation of the material, making it more appealing for archival as a reference book. The production costs of the book is subsidized by the conference and the editors have donated the royalty income of the book to the conference.

This book constitutes the refereed proceedings of the Third IFIP-TC6 Networking Conference, NETWORKING 2004, held in Athens, Greece, in May 2004. The 103 revised full papers and 40 revised short papers were carefully reviewed and selected from 539 submissions. The papers are organized in topical sections on network security; TCP performance; ad-hoc networks; wavelength management; multicast; wireless network performance; inter-domain routing; packet classification and scheduling; services and monitoring; admission control; competition in networks; 3G/4G

wireless systems; MPLS and related technologies; flow and congestion control; performance of IEEE 802.11; optical networks; TCP and congestion; key management; authentication and DOS prevention; energy aspects of wireless networks; optical network access; routing in ad-hoc networks; fault detection, restoration, and tolerance; QoS metrics, algorithms, and architecture; content distribution, caching, and replication; and routing theory and path computation.

Transmit power in wireless cellular networks is a key degree of freedom in the management of interference, energy, and connectivity. Power control in both the uplink and downlink of a cellular network has been extensively studied, especially over the last 15 years, and some of the results have enabled the continuous evolution and significant impact of the digital cellular technology. This survey provides a comprehensive discussion of the models, algorithms, analysis, and methodologies in this vast and growing literature. It starts with a taxonomy of the wide range of power control problem formulations, and progresses from the basic formulation to more sophisticated ones. When transmit power is the only set of optimization variables, algorithms for fixed SIR are presented first, before turning to their robust versions and joint SIR and power optimization. This is followed by opportunistic and non-cooperative power control. Then joint control of power together with beamforming pattern, base station assignment, spectrum allocation, and transmit schedule is surveyed one-by-one. Throughout the survey, we highlight the use of mathematical language and tools in the study of power control, including optimization theory, control theory, game theory, and linear algebra. Practical implementations of some of the algorithms in operational networks are discussed in the concluding section. As illustrated by the open problems presented at the end of most chapters, in the area of power control in cellular networks, there are still many under-explored directions and unresolved issues that remain theoretically challenging and practically important.

This volume describes ITU H H.323 and H.324, H.263, ITU-T video, and MPEG-4 standards, systems and coding; multimedia search and retrieval; image retrieval in digital laboratories; and the status and direction of MPEG-7.

This book presents an overview of local access networks and discusses new emerging technologies. Underpinning much of the evolving communications technology is the local access itself, both in traditional form of copper pairs but increasingly too through the use of new fibre, radio and copper systems.

This work concerns deployment of digital wireless networks. It first includes an overview of systems design and engineering integration. It then addresses deployment of CDMA networks, based on IS-95 standards. It also deals with the deployment of TDMA-based networks and wireless data networks.

We are delighted to present the proceedings of the 8th IFIP/IEEE International Conference on Management of Multimedia Networks and Services (MMNS 2005). The MMNS 2005 conference was held in Barcelona, Spain on October 24–26, 2005. As in previous years, the conference brought together an international audience of researchers and scientists from industry and academia who are researching and developing state-of-the-art management systems, while creating a public venue for results dissemination and intellectual collaboration. This year marked a challenging chapter in the advancement of management

systems for the wider management research community, with the growing complexities of the "so-called" multimedia over Internet, the proliferation of alternative wireless networks (WLL, WiFi and WiMAX) and 3G mobile services, intelligent and high-speed networks scalable multimedia services and the convergence of computing and communications for data, voice and video delivery. Contributions from the research community met this challenge with 65 paper submissions; 33 high-quality papers were subsequently selected to form the MMNS 2005 technical program. The diverse topics in this year's program included wireless networking technologies, wireless network applications, quality of services, multimedia, Web applications, overlay network management, and bandwidth management.

From entertainment to telephony, emerging wireless systems will make possible a new generation of wireless multimedia applications. "Multimedia Wireless Networks" is the first book to help network professionals systematically address QoS in today's most important wireless networks -- and tomorrow's.

As the demand for higher bandwidth has lead to the development of increasingly complex wireless technologies, an understanding of both wireless networking technologies and radio frequency (RF) principles is essential for implementing high performance and cost effective wireless networks. Wireless Networking Technology clearly explains the latest wireless technologies, covering all scales of wireless networking from personal (PAN) through local area (LAN) to metropolitan (MAN). Building on a comprehensive review of the underlying technologies, this practical guide contains 'how to' implementation information, including a case study that looks at the specific requirements for a voice over wireless LAN application. This invaluable resource will give engineers and managers all the necessary knowledge to design, implement and operate high performance wireless networks. · Explore in detail wireless networking technologies and understand the concepts behind RF propagation. · Gain the knowledge and skills required to install, use and troubleshoot wireless networks. · Learn how to address the problems involved in implementing a wireless network, including the impact of signal propagation on operating range, equipment inter-operability problems and many more. · Maximise the efficiency and security of your wireless network.

Wireless Multimedia Network TechnologiesSpringer Science & Business Media With the rapid evolution of multimedia communications, engineers and other professionals are generally forced to hoard a plethora of different texts and journals to maintain a solid grasp on essential ideas and techniques in the field. Wireless Multimedia Communications provides researchers and students with a primary reference to help readers take maximum advantage of current systems and uncover opportunities to propose new and novel protocols, applications, and services. Extract the Essentials of System Design, Analysis, Implementation A complete technical reference, the text condenses the essential topics of core wireless multimedia communication technologies, convergence, QoS, and

security that apply to everything from networking to communications systems, signal processing, and security. From extensive existing literature, the authors distill the central tenets and primary methods of analysis, design, and implementation, to reflect the latest technologies and architectural concepts. The book addresses emerging challenges to inform the system standardization process and help engineers combat the high error rates and stringent delay constraints that remain a significant challenge to various applications and services. Keep Pace with Detailed Techniques to Optimize Technology The authors identify causes of information loss in point-to-point signal transmission through wireless channels, and then they discuss techniques to minimize that loss. They use examples that illustrate the differences in implementing various systems, ranging from cellular voice telephony to wireless Internet access. Each chapter has been carefully organized with the latest information to serve dual purposes as an easy-to-reference guide for professionals and as a principal text for senior-level university students.

This book presents revised versions of tutorial lectures given at the IEEE/CS Symposium on modeling, analysis, and simulation of computer and telecommunication systems held in Orlando, FL, USA in October 2003. The lectures are grouped into three parts on performance and QoS of modern wired and wireless networks, current advances in performance modeling and simulation, and other specific applications of these methodologies. This tutorial book is targeted to both practitioners and researchers. The practitioner will benefit from numerous pointers to performance and QoS issues; the pedagogical style and plenty of references will be of great use in solving practical problems. The researcher and advanced student are offered a representative set of topics not only for their research value but also for their novelty and use in identifying areas of active research.

Wireless sensor networks have become an intricate and necessary addition to daily life by providing an energy efficient way to collect and monitor data while rerouting the information to a centralized location. As the application of these networks becomes more common, it becomes imperative to evaluate their effectiveness, as well as other opportunities for possible implementation in the future. The Handbook of Research on Wireless Sensor Network Trends, Technologies, and Applications provides inclusive coverage on the processing and applications of wireless communication, sensor networks, and mobile computing. Investigating emergent research and theoretical concepts in the area of wireless sensors and their applications to daily life, this handbook of research is a critical reference source for students, researchers, engineers, scientists, and working professionals.

This book advocates the idea of breaking up the cellular communication architecture by introducing cooperative strategies among wireless devices through cognitive wireless networking. It details the cooperative and cognitive aspects for future wireless communication networks. Coverage includes social

and biological inspired behavior applied to wireless networks, peer-to-peer networking, cooperative networks, and spectrum sensing and management. Rapid progress in software, hardware, mobile networks, and the potential of interactive media poses many questions for researchers, manufacturers, and operators of wireless multimedia communication systems. Wireless Multimedia Communication Systems: Design, Analysis, and Implementation strives to answer those questions by not only covering the underlying concepts involved in the design, analysis, and implementation of wireless multimedia communication systems, but also by tackling advanced topics such as mobility management, security components, and smart grids. Offering an accessible treatment of the latest research, this book: Presents specific wireless multimedia communication schemes that have proven to be useful Discusses important standardization processing activities regarding wireless networking Includes wireless mesh and multimedia sensor network architectures, protocols, and design optimizations Highlights the challenges associated with meeting complex connectivity requirements Contains numerous figures, tables, examples, references, and a glossary of acronyms Providing coverage of significant technological advances in their initial steps along with a survey of the fundamental principles and practices, Wireless Multimedia Communication Systems: Design, Analysis, and Implementation aids senior-level and graduate-level engineering students and practicing professionals in understanding the processes and furthering the development of today's wireless multimedia communication systems. Industrial electronics systems govern so many different functions that vary in complexity-from the operation of relatively simple applications, such as electric motors, to that of more complicated machines and systems, including robots and entire fabrication processes. The Industrial Electronics Handbook, Second Edition combines traditional and new The provision of IP-based multimedia services is one of the most exiting and challenging aspects of next generation wireless networks. A significant evolution has been underway for enabling such multimedia services and for ultimately migrating the Internet to the wireless world. This book examines this evolution, looking at an array of the most up-to-date wireless multimedia technologies and services. The first part focuses on enabling technologies for wireless multimedia, while the second is dedicated to the new wireless multimedia services that are expected to play a key role in the future wireless environment. In addition, the related recent standardization, research and industry activities are addressed. * Covers a complete range of multimedia hot topics, ranging from audio/video coding techniques to multimedia protocols and applications * Discusses QoS issues in WLANs, 3G and hybrid 3G/WLAN networks * Provides in-depth discussion of the most modern multimedia services, such as Push-to-Talk, Instant Messaging, Presence, mobile payments, MMS, WAP, and location-based multimedia services * Addresses the emerging Multimedia Broadcast/Multicast Service (MBMS) and the key aspects of IP Multimedia Subsystem (IMS) in 3G

networks * Numerous on-line references will assist readers in their quest for the most up-to-date information This comprehensive resource will have instant appeal to students in electrical and computer engineering or IT disciplines. It is also essential reading for engineering managers, engineers in wireless systems and multimedia, and wireless multimedia researchers.

The Internet has nearly a ten year history as a global, public communication infrastructure. The two applications that have created the demand from private and business users have been the World-Wide Web and electronic mail. We have inthelast?veyearsseentherapidlyemergingpopularityofpeer-to-peersharing of ?les, mostly for music, and to a more limited extent also the introduction of Internet telephony, television, and radio. These services place demands on the infrastructure that are higher with respect to quality and connectivity than web sur?ng and e-mail. Mobile (cellular) telephony has rivaled the Internet with respect to growth during the last decade. The hitherto separate networks are now set to merge into a mobile Internet that will give wireless access to all Internet services. The ambition behind the Internet's continuing development is that it should serve as a general-purpose infrastructure and provide adequate support for all types of applications in terms of quality, connectivity, and cost. Thus the demands made on all Internet services must also be met by wireless access, and the circuit quality of a voice connection for mobile telephony must also be provided in the wiredIPnetworks.

A broad overview of the home networking field, ranging from wireless technologies to practical applications In the future, it is expected that private networks (e.g., home networks) will become part of the global network ecosystem, participating in sharing their own content, running IP-based services, and possibly becoming service providers themselves. This is already happening in the so-called "social networks" and peer-to-peer file sharing networks on the Internet—making this emerging topic one of the most active research areas in the wireless communications field. This book bridges the gap between wireless networking and service research communities, which, until now, have confined their work to their respective fields. Here, a number of industry professionals and academic experts have contributed chapters on various aspects of the subject to present an overview of home networking technologies with a special emphasis on the user as the center of all activities. Coverage includes: Networked home use cases and scenarios Media format, media exchange, and media interoperability Location-aware device and service discovery Security in smart homes Secure service discovery protocol implementation for wireless ad-hoc networks Multimedia content protection in consumer networks Mobile device connectivity in home networks Unlicensed mobile access/generic access network Wireless sensor networks in the home Ultra-wideband and sensor networking in the home environment With a balanced mix of practice and theory, Technologies for Home Networking focuses on the latest technologies for speedier, more reliable wireless networking and explains how to facilitate workable end-to-end

solutions from a user's perspective. This book is an ideal resource for practicing engineers, designers, and managers with an interest in home networking and also serves as a valuable text for graduate students.

the local arrangements.

"This multiple-volume publication advances the emergent field of mobile computing offering research on approaches, observations and models pertaining to mobile devices and wireless communications from over 400 leading researchers"--Provided by publisher.

This volume presents the proceedings of the 12th IFIP/IEEE International Conference on Management of Multimedia and Mobile Networks and Services (MMNS 2009), which was held in Venice, Italy, during October 26–27 as part of the 5th InternationalWeek on Managementof Networksand Services(Manweek 2009). As in the previous four years, the Manweek umbrella allowed an inter-tional audience of researchers and scientists from industry and academia – who are researching and developing management systems – to share views and ideas and present their state-of-the-art results. The other events forming Manweek 2009 were the 20th IFIP/IEEE Inter- tional Workshop on Distributed Systems: Operations and Management (DSOM 2009),the9thIEEEWorkshoponIPOperationsandManagement(IPOM2009), the 4th IEEEInternationalWorkshoponModeling Autonomic Communications Environments(MACE 2009),and the 6th InternationalWorkshoponNext G- eration Networking Middleware (NGNM 2009). Under this umbrella, MMNS proved itself again as a major conference for research and innovation in the management of multimedia technology and n- worked services. The scope of MMNS has been expanded in recent years to include mana- ment of emerging mobile and wireless networks and their integration with more traditional network infrastructures. The objective of the conference is to bring together researchersand scientists, from both academia and industry, interested in state-of-the-art management of converged multimedia networks and services across heterogeneous networking infrastructures, while creating a public venue for result dissemination and intellectual collaboration.

"This book highlights and discusses the underlying QoS issues that arise in the delivery of real-time multimedia services over wireless networks"--Provided by publisher.

Wireless Communication Technologies: New Multimedia Systems is based on a selection of the best papers presented at the recent International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC '99). All of the papers have been extended into full chapters, critiqued, and edited into a unified and structured book. Contributions to this volume are by the leading specialist from their respective fields. The topics represent the newest ideas and research involving wireless multimedia systems and wireless technologies. Part I focuses on key developments and technologies and includes coverage of wireless channel modeling, space-time coding, coding for wireless networks, OFDM, software radio, and spatial and temporal communication theory. Chapters in Part II address many of the new wireless systems currently being standardized; such as, intelligent transport systems, wireless internet,

digital TV broadcasting, and IMT-2000. Insights into many of the hot and rapidly developing research topics, such as bluetooth, Mobile IP, GPRS, and others, are discussed. Each chapter includes basic concepts and technical trends in addition to providing extensive technical coverage. Researchers and engineers of wireless communication systems will benefit from insights and results reported in Wireless Communication Technologies: New Multimedia Systems. This work may also be suitable for graduate level courses on Wireless Communication Systems, Cellular Communication Systems, and Mobile Communications.

Due to the great success and enormous impact of IP networks, In ternet access (such as sending and receiving e-mails) and web brows ing have become the ruling paradigm for next generation wireless systems. On the other hand, great technological and commercial success of services and applications is being witnessed in mobile wire less communications with examples of cellular, pes voice telephony and wireless LANs. The service paradigm has thus shifted from the conventional voice service to seamlessly integrated high quality mul timedia transmission over broadband wireless mobile networks. The multimedia content may include data, voice, audio, image, video and so on. With availability of more powerful portable devices, such as PDA, portable computer and cellular phone, coupled with the easier access to the core network (using a mobile device), the number of mobile users and the demand for multimedia-based applications is increasing rapidly. As a result, there is an urgent need for a sys tem that supports heterogeneous multimedia services and provides seamless access to the desired resources via wireless connections. Therefore, the convergence of multimedia communication and wireless mobile networking technologies into the next generation wireless multimedia (WMM) networks with the vision of "anytime, anywhere, anyform" information system is the certain trend in the foreseeable future. However, successful combination of these two technologies presents many challenges such as available spectral bandwidth, energy efficiency, seamless end-to-end communication, robustness, security, etc.

Extensively updated evaluation of current and future network technologies, applications and devices This book follows on from its successful predecessor with an introduction to next generation network technologies, mobile devices, voice and multimedia services and the mobile web 2.0. Giving a sound technical introduction to 3GPP wireless systems, this book explains the decisions taken during standardization of the most popular wireless network standards today, LTE, LTE-Advanced and HSPA+. It discusses how these elements strongly influence each other and how network capabilities, available bandwidth, mobile device capabilities and new application concepts will shape the way we communicate in the future. This Second Edition presents a comprehensive and broad-reaching examination of a fast-moving technology which will be a welcome update for researchers and professionals alike. Key features: Fully updated and expanded to include new sections including VoLTE, the evolution to 4G, mobile Internet access, LTE-Advanced, Wi-Fi security and backhaul for wireless networks Describes the successful commercialization of Web 2.0 services such as Facebook, and the emergence of app stores, tablets and smartphones Examines the evolution of mobile devices and operating systems, including ARM and x86 architecture and their application to voice-optimized and multimedia devices 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. As computer systems evolve, the volume of data to be processed increases significantly, either as a consequence of the expanding amount of available information, or due to the possibility of performing highly complex operations that were not feasible in the past. Nevertheless, tasks that depend on the manipulation of large amounts of information are still performed at large computational cost, i.e., either the processing time will be large, or they will require intensive use of computer resources. In this scenario, the efficient use of available computational resources is paramount, and creates a demand for systems that can optimize the use of resources in relation to the amount of data to be processed. This problem becomes increasingly critical when the volume of information to be processed is variable, i.e., there is a seasonal variation of demand. Such demand variations are caused by a variety of factors, such as an unanticipated burst of client requests, a time-critical simulation, or high volumes of simultaneous video uploads, e.g. as a consequence of a public contest. In these cases, there are moments when the demand is very low (resources are almost idle) while, conversely, at other moments, the processing demand exceeds the resources capacity. Moreover, from an economical perspective, seasonal demands do not justify a massive investment in infrastructure, just to provide enough computing power for peak situations. In this light, the ability to build adaptive systems, capable of using on demand resources provided by Cloud Computing infrastructures is very attractive. Next-generation mobile communications are likely to employ different techniques and standards. The implementation in software of as many receiver functionalities as possible appears to be the most effective solution for coping with the multiplicity of communications alternatives. The concept of software radio, dating back to 1991, originally attracted commercial interest owing to the possibility that transmission layer functions could be fully software-defined. The same approach can be extended to protocols of the higher layers too, thus conceiving a programmable hardware to implement the functionalities of several layers of protocols by resident software or software downloaded from the network. Consisting of selected technical contributions to the Workshop on "Software Radio", this volume deals with state-of-the-art surveys of the enabling technologies and the prospective services of software radio implementations for future mobile communications. Original and state-of-the-art research and development is presented in fields such as: - Software radio for universal wireless internet access - Software radio for multimedia communications - Software radio architecture - Network architecture, protocols and services - Software radio technology towards pervasive appliance. This volume on software radio is a valuable reference for both researchers and telecommunications professionals.