

1. Record Nr.	UNINA9911019097003321
Autore	Lin Yi-Bing <1961->
Titolo	Charging for mobile all-IP telecommunications / / Yi-Bing Lin, Sok-lan Sou
Pubbl/distr/stampa	Chichester, West Sussex, U.K., : John Wiley and Sons Ltd., 2008
ISBN	9786611841133 9781281841131 1281841137 9780470777671 0470777672 9780470777664 0470777664
Descrizione fisica	1 online resource (301 p.)
Collana	Wiley series on wireless communications and mobile computing
Altri autori (Persone)	SouSok-lan
Disciplina	384.5/33 621.3845
Soggetti	Internet telephony - Prices Cell phone services industry Invoices - Computer programs
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Preface -- Chapter 1: Introduction -- 1.1 Charging for Mobile All-IP Networks -- 1.2 Online Charging -- 1.3 Concluding Remarks -- 1.4 Review Questions -- 1.5 References -- Chapter 2: Telecommunications Networks -- 2.1 Public Switched Telephone Network -- 2.2 Global System for Mobile Communications -- 2.3 Universal Mobile Telecommunications System -- 2.4 IP Multimedia Core Network Subsystem -- 2.5 WLAN and Cellular Interworking -- 2.6 Concluding Remarks -- 2.7 Review Questions -- 2.8 References -- Chapter 3: Telecommunications Services -- 3.1 Automated Attendant -- 3.2 Charging Services -- 3.3 Routing Services -- 3.4 Dialing Services -- 3.5 Screening Services -- 3.6 Interrupt Services -- 3.7 Mass Call -- 3.8 Universal Personal Telecommunications Number -- 3.9 Interactive Voice Response Techniques -- 3.10 Other Telephone Services -- 3.11

Mobile Telecommunications Services -- 3.12 Concluding Remarks --
3.13 Review Questions -- 3.14 References -- Chapter 4: GPRS
Tunneling Protocol Extension -- 4.1 The GTP' Protocol -- 4.2
Connection Setup Procedure -- 4.3 CDR Transfer Procedure -- 4.4
Prepaid Quota Management -- 4.5 Prepaid Quota Management
Procedure -- 4.6 Concluding Remarks -- 4.7 Review Questions -- 4.8
References -- Chapter 5: Mobile Charging Protocols -- 5.1 Customized
Application for the Mobile Network Enhanced Logic (CAMEL) -- 5.2
Remote Access Dial In User Service (RADIUS) -- 5.3 Diameter -- 5.4
Diameter-based Offline Charging -- 5.5 Diameter-based Online
Charging -- 5.6 Session Initiation Protocol: IMS Charging Headers --
5.7 Concluding Remarks -- 5.8 Review Questions -- 5.9 References --
Chapter 6: UMTS CS/PS Charging Management -- 6.1 Circuit Switched
Service Domain -- 6.2 Packet Switched Service Domain -- 6.3
Concluding Remarks -- 6.4 Review Questions -- 6.5 References --
Chapter 7: IMS and MMS Offline Charging Management -- 7.1 Offline
Charging for IMS -- 7.2 IMS Charging Correlation -- 7.3 Multimedia
Messaging Service Domain -- 7.4 Mediation Device -- 7.5 Concluding
Remarks.
7.6 Review Questions -- 7.7 References -- Chapter 8: UMTS Online
Charging -- 8.1 UMTS Charging Architecture (Release 6) -- 8.2 Online
Charging Scenarios -- 8.3 Concluding Remarks -- 8.4 Review
Questions -- 8.5 References -- Chapter 9: Service Data Flow-based
Charging -- 9.1 Online Flow Based Charging Architecture -- 9.2
Content-based Service for Online TPF/GPRS -- 9.3 Online IMS Flow-
based Charging -- 9.4 Policy and Charging Control Integration -- 9.5
Concluding Remarks -- 9.6 Review Questions -- 9.7 References --
Chapter 10: Billing for VoIP Services -- 10.1 A VoIP Network
Architecture -- 10.2 Call Detail Record Generation -- 10.3 Deriving
Call Holding Time Distributions -- 10.4 Observations from the Call
Holding Time Statistics -- 10.5 Concluding Remarks -- 10.6 Review
Questions -- 10.7 References -- Appendix A. Connection Failure
Detection for GTP' -- A.1 GTP' Failure Detection -- A.2 Numerical
Examples -- A.3 Concluding Remarks -- A.4 Notation -- A.5
References -- Appendix B. Charging for Integrated Prepaid VoIP and
Messaging Services -- B.1 Prepaid Application Server of SIP-based
Services -- B.2 Charging Integration for Prepaid Calls and Instant
Messaging -- B.2.1 Prepaid IMS-to-PSTN Call Setup and Release -- B.
2.2 Prepaid Instant Messaging Delivery -- B.2.3 Charging Policy of the
Prepaid Application Server -- B.3 Performance for the PAS Charging
Policy -- B.4 Concluding Remarks -- B.5 Notation -- B.6 References --
Appendix C. Modeling Credit Reservation for OCS -- C.1 Recharge
Threshold-based Credit Reservation -- C.2 Numerical Examples and
Conclusions -- C.3 Notation -- C.4 References -- Appendix D.
Reducing Credit Re-authorization Cost -- D.1 Credit Re-authorization
Procedure -- D.2 The Threshold-based Scheme -- D.3 Numerical
Examples -- D.4 Concluding Remarks -- D.5 Notation -- D.6
References -- Appendix E. Credit Redistribution for UMTS Prepaid
Service through CAMEL -- E.1 The IN Approach for the UMTS Prepaid
Service -- E.2 The Prepaid Charging Message Flow.
E.3 The Prepaid Credit Reclaim (PCR) Mechanism -- E.4 Concluding
Remarks -- E.5 Notation -- E.6 References -- Appendix F. An Example
of IMS Charging Application Server -- F.1 Rf/Ro Interface and Session
Initialization -- F.2 Creating Rf/Ro Requests -- F.3 Receiving Answers
-- F.4 Error/Timeout Handling and Debugging -- F.5 References --
Appendix G. Non-IP-Based Prepaid Phone Service -- G.1 Non-IP-based
Mobile Prepaid Services -- G.2 Wireless Intelligent Network Approach
-- G.2.1 WIN Call Origination -- G.2.2 WIN Call Termination -- G.2.3

WIN Prepaid Recharging -- G.3 Service Node Approach -- G.4 Hot Billing Approach -- G.4.1 Hot Billing Initialization and Call Origination -- G.4.2 Hot Billing Customer Query and Recharging -- G.5 Handset-Based Approach -- G.5.1 SIM Card Issues -- G.5.2 Handset-Based Call Origination -- G.5.3 Handset-Based Prepaid Recharging -- G.6 Comparison of the Prepaid Solutions -- G.6.1 Roaming to other networks -- G.6.2 Scalability -- G.6.3 Fraud Risk -- G.6.4 Initial System Setup -- G.6.5 Service Features -- G.6.6 Real-Time Rating -- G.7 Business Issues -- G.8 Concluding Remarks -- G.9. Review Questions -- G.10. References -- Appendix H. Performance of Service Node Based Mobile Prepaid Service -- H.1 The Service Node Approach -- H.2 Numeric Examples -- H.2.1 Effects of the Variation of Call Charges -- H.2.2 Effect of I on $E[BL^*]/I$ -- H.2.3 The Cost Function -- H.3 Concluding Remarks -- H.4 Notation -- H.5 References.

Sommario/riassunto

This book provides a complete and comprehensive overview of 3G UMTS charging services. Evolving from offline billing of traditional telecommunications, charging for IP services in mobile networks is challenging; charging convergence is one of the major trends in the telecom industry. Advanced mobile telecommunications incorporates data applications with real-time control and management, and requires a convergent and flexible online charging system. Such convergence is essential to mitigate fraud and credit risks in order to provide more personalized information to users about charges and credit limit controls. Charging for Mobile All-IP Telecommunications provides comprehensive and practical coverage of online and offline charging based on mobile operator experiences, and the latest efforts undertaken by the UMTS specifications. Key features: . Presents a complete overview of the telecommunications charging system, including the evolution from 2G to 3G and all-IP network charging frameworks . Discusses all management aspects related to charging and billing processes, with a focus on the major trends and developments within the telecoms industry . Provides an overview of the telecom networks such as PSTN, GSM, UMTS and IMS . Covers the concepts of the telecom charging on mobile services and the new technologies for implementing online charging system, such as GTP' and Diameter protocol . Contains coverage on network nodes and data flows in relation to charging of mobile applications, such as IMS call and content downloading . Explains the IP-based online charging system, protocol details and recent trends in charging for mobile telecom industry This book is an invaluable resource for graduate students, telecoms and IP engineers, network service providers and system architects. Information technologists and networking equipment manufacturers will also find this book insightful.
