

Table of Contents

Management of Multimedia Traffic Streaming I

A Hysteresis Based Approach for Quality, Frame Rate, and Buffer Management for Video Streaming Using TCP	1
<i>Nagasuresh Seelam, Pankaj Sethi, and Wu-chi Feng, Ohio State University, USA</i>	
A Transmission Scheme for Streaming Variable Bit Rate Video over Internet	16
<i>Sunghoon Son, Electronics and Telecommunications Research Institute, Korea</i>	
MPEG-4 Video Transfer with TCP-Friendly Rate Control	29
<i>Naoki Wakamiya, Masaki Miyabayashi, Masayuki Murata, and Hideo Miyahara, Osaka University, Japan</i>	

Resource Management in Wireless Multimedia

IP Radio Resource Control System	43
<i>John Vicente, Intel Corporation, and Andrew T. Campbell, Columbia University, USA</i>	
Is It Worth Involving Several Cooperating Agents for Multimedia User's Admission in Cellular Networks?	57
<i>Youssef Iraqi and Raouf Boutaba, University of Waterloo, Canada</i>	
Analysis of Random Access Protocol under Bursty Traffic	71
<i>Jianbo Gao and Izhak Rubin, University of California, Los Angeles, USA</i>	

Management of Multimedia Traffic Streaming II

A Practical Model for VBR Video Traffic with Applications	85
<i>Tamás Borsos, Budapest University of Technology and Economics, Hungary</i>	
Enhancing Quality of MPEG Video through Partially Reliable Transport Service in Interactive Application	96
<i>Vincent Lecuire, Francis Lepage, Centre de Recherche en Automatique de Nancy, France, and Khalil Kammoun, University of Karlsruhe, Germany</i>	

Delivering of MPEG-4 Multimedia Content over Next Generation Internet	110
<i>Toufik Ahmed, Guillaume Buridant, and Ahmed Mehaoua, University of Versailles, France</i>	
Video Skimming and Summarization Based on Principal Component Analysis	128
<i>Dan Lelescu, Compression Science Inc., and Dan Schonfeld, University of Illinois at Chicago, USA</i>	

QoS Management on the Internet

Distributed Resource Management to Support Distributed Application-Specific Quality of Service	142
<i>Gary Molenkamp, Michael Katchabaw, Hanan Lutfiyya, and Michael Bauer, The University of Western Ontario, Canada</i>	
Implementation of a Bandwidth Broker for Dynamic End-to-End Capacity Reservation over Multiple Diffserv Domains	160
<i>Ibrahim Khalil and Torsten Braun, University of Berne, Switzerland</i>	
The Impact of Confidentiality on Quality of Service in Heterogeneous Voice over IP Networks	175
<i>Johnathan M. Reason and David G. Messerschmitt, University of California, Berkeley, USA</i>	

Poster Session

Queue Length Based Fair Queueing in Core-Stateless Networks	193
<i>Mingyu Zhai, Guanqun Gu, and Yuan Yuan, Southeast University, China</i>	
Study of TCP and UDP Flows in a Differentiated Services Network Using Two Markers System	198
<i>Sung-Hyuck Lee, Seung-Joon Seok, Seung-Jin Lee, and Chul-Hee Kang, Korea University, Korea</i>	
Equation-Based Dynamic Shaping Algorithm	204
<i>Halima Elbiaze, Tijani Chahed, Gérard Hébuterne and Tulin Atmaca, Institut National des Telecommunications, France</i>	
A Novel Content-Based Video Streaming Algorithm for Fine Granular Scalable Coding	210
<i>Li Zhao, Qi Wang, Yuwen He, Shiqiang Yang and Yuzhuo Zhong, Tsinghua University, China</i>	

Topological Synthesis of Mobile Backbone Networks for Managing Ad Hoc Wireless Networks	215
<i>Izhak Rubin and Patrick Vincent, University of California, Los Angeles, USA</i>	
QoS Monitoring System on IP Networks	222
<i>Marcelo Borges Ribeiro, Lisandro Zambenedetti Granville, Maria Janilce Bosquiroli Almeida, and Liane Margarida Rockenbach Tarouco, Federal University of Rio Grande do Sul, Brazil</i>	

Fault Management on the Internet

A Framework for Supporting Intelligent Fault and Performance Management for Communication Networks	227
<i>Hongjun Li and John S. Baras, University of Maryland, College Park, USA</i>	
Architecture of Generalized Network Service Anomaly and Fault Thresholds	241
<i>Zheng Zhang and Constantine Manikopoulos, New Jersey Institute of Technology, and Jay Jorgenson, City College of New York, USA</i>	
Providing Scalable Many-to-One Feedback in Multicast Reachability Monitoring Systems	256
<i>Kamil Saraç and Kevin C. Almeroth, University of California, Santa Barbara, USA</i>	
A Framework for Event Correlation in Communication Systems	271
<i>Mouayad Albaghdadi, Bruce Briley, Mohammed Petiwala, Mark Hamlen, Motorola Inc., Martha Evens, Illinois Institute of Technology, and Rafiq Sukkar, Lucent Technologies, USA</i>	

Agents for Multimedia Management

Policy-Based Management for Multimedia Collaborative Services	285
<i>Hamid Harroud, Mouhsine Lakhdissi, Ahmed Karmouch, University of Ottawa, and Cliff Grossner, Nortel Networks, Canada</i>	
Agent-Enhanced Dynamic Service Level Agreement in Future Network Environment	299
<i>David Chieng, Alan Marshall, The Queen's University of Belfast, Ivan Ho, and Gerard Parr, University of Ulster at Coleraine, U.K.</i>	
WEBARM: Mobile Code Based Agent for Web Application Response Measurement – Software Implementations and Analysis	313
<i>Joseph V. Elarde and Gregory B. Brewster, DePaul University, USA</i>	

Multimedia Service Management

The Dynamics of Price, Revenue, and System Utilization 329
 *Srinivasan Jagannathan and Kevin C. Almeroth, University of California,
 Santa Barbara, USA*

Developing Pattern-Based Management Programs 345
 Koon-Seng Lim and Rolf Stadler, Columbia University, USA

Supermedia in Internet-Based Telerobotic Operations 359
 *Imad Elhajj, Ning Xi, Michigan State University, USA, Wai Keung Fung,
 Yun hui Liu, Wen J. Li, Chinese University of Hong Kong, Hong Kong,
 Tomoyuki Kaga, and Toshio Fukuda, Nagoya University, Japan*

Author Index 373