

C. COMMUNICATIONS QoS AND RELIABILITY SYMPOSIUM

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Anil P. Macwan, *Lucent Technologies, USA*

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Kelly Krick, *Nortel Networks, USA*

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Tadayuki Kanno, *Hitachi, Japan*

Mostafa Hashem Sherif, *AT&T, USA*

Daneshmand, Mahmoud, *AT&T, USA*

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Yoshiaki Kiriha, *NEC, Japan*

Makiko Yoshida, *NEC, Japan*

Sponsoring Technical Committees:

Communications Quality and Reliability, Communications Switching and Routing

C01 DIFFSERV

Monday 29 April 2002

8:50 - 10:20

Carnegie, 5th Floor

Session Chair: Hiroimi Ueda, *NTT, Japan*

C01-1 Optimization Flow Control for Aggregate Traffic Handling in the Differentiated Services Internet

Suntorn Witosurapont, Jim Lambert, Iraj Ouveysi, *Swinburne University of Technology, Australia*

C01-2 Random Early Marking: Improving TCP Performance in DiffServ Assured Forwarding

Sandra Tartarelli, Albert Banchs, *NEC Europe Ltd., Germany*

C01-3 Performance Analysis for an IP Differentiated Services Network

C. Chassot, F. Garcia, G. Auriol, A. Lozes, CNRS, France, E. Lochin Emmanuel, P. Anelli Pascal, *Laboratoire Informatique de Paris 6, France*

C01-4 A Round Trip Time and Time-out Aware Traffic Conditioner for Differentiated Services Networks

Ahsan Habib, Bharat Bhargava, Sonia Fahmy, *Purdue University, USA*

C01-5 A Novel, Practical Pricing Strategy for Congestion Control and Differentiated Services

Adam J. O'Donnell, Harish Sethu, *Drexel University, USA*

C02 FAIRNESS SCHEDULING AND QoS

GUARANTEE

Monday 29 April 2002

10:40 - 12:10

Carnegie, 5th Floor

Session Chair: Hiroimi Ueda, *NTT, Japan*

C02-1 Proportional Fairness Scheduling on Tandem Network

Yong Jiang, Jianping Wu, Ke Xu, *Tsinghua University, China*

C02-2 On the Evaluation of Fairness for Input Queue Switches

Dirceu Cavendish, Marcello Lajolo, Hongbo Liu, *NEC USA Inc., USA*

C02-3 A New Bandwidth Guaranteed

Routing Algorithm for MPLS Traffic Engineering

Bin Wang, Xu Su, C. L. Philip Chen, *Wright State University, USA*

C02-4 Performance Analysis of a Generic GMPLS Switching Architecture with Flush Capability

Ling-Chih Kao, Zsehong Tsai, *National Taiwan University, Taiwan*

C03 QoS OF AD-HOC NETWORKS, A JOINT SESSION WITH WIRELESS NETWORKING THEORY

Monday 29 April 2002

13:40 - 15:10

Carnegie, 5th Floor

Session Chair: Kenichi Mase, *Niigata University, Japan*

C03-1 A Novel Framework for QoS-Aware Resource Discovery in Mobile Ad Hoc Networks

Jiangchuan Liu, Bo Li, *The Hong Kong University of Science and Technology, Hong Kong*, Qian Zhang, Wenwu Zhu, *Microsoft Research, China*, Jun Zhang, *University of Wisconsin at Milwaukee, USA*

C03-2 Group Mobility and Partition Prediction in Wireless Ad-Hoc Networks

Karen H. Wang, Baochun Li, *University of Toronto, Canada*

C03-3 Predictive Location-based QoS

Routing in Mobile Ad Hoc Networks

Samarth H. Shah, Klara Nahrstedt, *University of Illinois at Urbana-Champaign, USA*

C03-4 A Set Partitioning Approach for Cellular Planning of Mobile Radio Network

Syed Zahid Ali, *Imperial College of Science, Technology, and Medicine, UK*

C04 MOBILE IP, A JOINT SESSION WITH WIRELESS NETWORKING THEORY

Monday 29 April 2002

15:30 - 17:00

Carnegie, 5th Floor

Session Chair: Kelly Krick, *Nortel Networks, USA*

C04-1 Dynamic Service Negotiation Protocol (DSNP) and Wireless Diffserv

Jyh-Cheng Chen, National Tsing Hua University, Taiwan, Anthony McAuley, *Telcordia Technologies, USA*, Venkatesh Sarangan, *Penn State University, USA*, Shinichi Baba, Yoshihiro Ohba, *Toshiba America Research, Inc., USA*

C04-2 A Linux-based EGPRS Real-time Test Bed Software for Wireless QoS and Differentiated Service Studies

Meng-Ju Lin, Hui Luo, Li Fung Chang, *AT&T Labs, USA*

C04-3 Integration of IP Mobility and Security for Secure Wireless Communications

Melbourne Barton, John Lee, Sanjai Narain, K. Daniel Wong, *Telcordia Technologies, USA*, Derek Atkins, *IHTFP Consulting, USA*, Deidra Ritcherson, *Univeristy of Chicago, USA*, Kemal E. Tepe, *Rutgers University, USA*

C04-4 Optimizing Public-Key Encryption for Wireless Clients

Nachiketh R. Potlapally, Srivaths Ravi, Anand Raghunathan, *NEC USA, Inc., USA*, Ganesh Lakshminarayana, *Alphion Corporation, USA*

C05 PROVISIONING AND DIMENSIONING, A JOINT SESSION WITH NEXT GENERATION NETWORKS

Tuesday 30 April 2002

10:40 - 12:10

Carnegie, 5th Floor

Session Chair: Stan Moyer, *Telcordia Technologies, USA*

C05-1 Network Services Definition and Deployment in a Differentiated Services Architecture

E. Nikolouzou, S. Maniatis, P. Sampatakos, H. Tsetsekas, I. S. Venieris, *National Technical University of Athens, Greece*

C05-2 Path Provisioning for Service Level Agreements in Differentiated Services Networks

S. K. Biswas, Tellium, Inc., USA, S. Ganguly, R. Izmailov, *NEC USA, Inc., USA*

C05-3 Game Theoretic Analysis of Network Dimensioning Strategies in Differentiated Services Networks

Péter Füzési, Attila Vidács, *Budapest University of Technology and Economics, Hungary*

C05-4 Efficient Heuristic Algorithms for Finding Multiconstrained Paths

Jingchao Chen, *DongHua University, China*

C06 QoS GUARANTEE MECHANISMS I

Tuesday 30 April 2002

13:40 - 15:10

Carnegie, 5th Floor

Session Chair: Chi-Ming Chen, *AT&T, USA*

C06-1 Delay Optimized Worst Case Fair WFQ (WF2Q) Packet Scheduling

X. Fei, A. Marshall, *The Queen's University of Belfast, UK*

C06-2 An Edge Router Based Protocol for Fault Tolerant Handling of Advance Reservations

Sudeept Bhatnagar, Badri Nath, *Rutgers University, USA*

C06-3 A QoS Packet/Burst Scheduler for Broadband Networks

Maria C. Yuang, Julin Shih, Po-Lung Tien, *National Chiao Tung University, Taiwan*

C06-4 Dynamic Adaptive Guaranteed QoS Provisioning over GPRS Wireless Mobile Links

Oliver Yu, Shashank Khanvilkar, *University of Illinois at Chicago, USA*

C07 QoS GUARANTEE MECHANISMS II

Tuesday 30 April 2002
15:30 - 17:00
Carnegie, 5th Floor

Session Chair: Chi-Ming Chen, *AT&T, USA*

C07-1 Mutually Compensatory Property of Multimedia QoS
Shuji Tasaka, Yutaka Ishibashi, *Nagoya Institute of Technology, Japan*

C07-2 Optimal per-Node Rate Allocation to Provide per-Flow End-to-End Delay Guarantees in a Network of Routers Supporting Guaranteed Service Class
Aniruddha Diwan, Joy Kuri, Anurag Kumar, *Indian Institute of Science, India*

C07-3 An Adaptive Scheduler to Provide QoS Guarantees in an Input-Buffered Switch
Chun-Xiang Chen, *Hiroshima Prefectural University, Japan*, Masaharu Komatsu, *Okayama University of Science, Japan*

C07-4 Partial Optimization Method of Topology Aggregation for Hierarchical QoS Routing
Wooguil Pak, *Samsung Secui.com, Korea*, Saewoong Bahk, *Seoul National University, Korea*

C08 SERVICE AND SYSTEM DESIGNS AND QoS

Tuesday 30 April 2002
15:30 - 17:00
Imperial, 5th Floor

Session Chair: Karl Rauscher, *Lucent Technology, USA*

C08-1 Edge-based QoS Provisioning for Point-to-Set Assured Services
Satish Raghunath, Kartikeya Chandrayana, Shivkumar Kalyanaraman, *Rensselaer Polytechnic Institute, USA*

C08-2 The Service Curve Discipline with the Service Curve Discipline in the Rate-Controlled EDF Service Discipline in Variable-Sized Packet Networks
Kihyun Pyun, Junehwa Song, Heung-Kyu Lee, *Korea Advanced Institute of Science and Technology, Korea*

C08-3 Experimental Testbed Results for Broadband Residential Video Service QoS Management
R. J. Green, QinetiQ, UK, S. I. Woolley, *The University of Birmingham, UK*, N. W. Garnham, K. P. Jones, *Fujitsu Telecommunications Europe Limited, UK*

C08-4 Delay Bounds for a Network of Guaranteed Rate Servers with FIFO Aggregation
Yuming Jiang, *National University of Singapore, Singapore*

C09 NETWORK SECURITY

Wednesday 01 May 2002
8:50 - 10:20
Carnegie, 5th Floor

Session Chair: Mahmoud Daneshmand, *AT&T, USA*

C09-1 Tracing Watermarking for Multimedia Communication Quality Assessment
Patrizio Campisi, Marco Carli, Gaetano Giunta, Alessandro Neri, *Università degli Studi "Roma Tre", Italy*

C09-2 A Time-Efficient Contributory Key

Agreement Scheme for Secure Group Communications
Bin Sun, *Beijing University of Posts and Telecommunications, China*, Wade Trappe, Yan Sun, K. J. Ray Liu, *University of Maryland at College Park, USA*

C09-3 Performance Analysis of IPsec Protocol: Encryption and Authentication
O. Elkeelany, G. Chaudhry, D. Medhi, *University of Missouri at Kansas City, USA*, M. M. Matalgah, K. P. Sheikh, M. Thaker, J. Gaddour, *Sprint, USA*

C09-4 Investigation of Intrusion Tolerance for COTS Middleware
Manish Rathi, *Leapstone Systems, USA*, Farooq M Anjum, Rabih Zbib, Abhrajit Ghosh, Amjad Umar, *Telcordia Technologies, USA*

C10 MPLS

Wednesday 01 May 2002
8:50 - 10:20
Imperial, 5th Floor

Session Chair: Pascal Lorenz, *University of Haute Alsace, France*

C10-1 RD-QoS—The Integrated Provisioning of Resilience and QoS in MPLS-based Networks

A. Autenrieth, *Munich University of Technology, Germany*, A. Kirstädter, *Siemens AG, Germany*

C10-2 MPLS Performance Evaluation in Backbone Network
Guangyi Liu, Xiaokang Lin, *Tsinghua University, China*

C10-3 Delay-based Adaptive Load Balancing in MPLS Networks
Deyun Gao, Yantai Shu, Shuo Liu, *Tianjin University, China*, Oliver W. W. Yang, *University of Ottawa, Canada*

C10-4 A Distributed LSP Mechanism to Reduce Spare Bandwidth in MPLS Networks
Kyu Seek Sohn, Dan Keun Sung, *Korea Advanced Institute of Science and Technology, Korea*

C11 VOIP AND QoS MANAGEMENT, A JOINT SESSION WITH MULTIMEDIA AND VOIP SERVICES AND TECHNOLOGIES

Wednesday 01 May 2002
10:40 - 12:10
Carnegie, 5th Floor

Session Chair: Jergen Quittek, *NEC Europe, Germany*

C11-1 End-to-End Measurement Based Admission Control for VoIP Networks
Kenichi Mase, Yuichiro Toyama, Niigata University, Japan

C11-2 Characterizing Packet Audio Streams from Internet Multimedia Applications
Chen-Nee Chuah, *University of California at Davis, USA*, Randy H. Katz, *University of California at Berkeley, USA*

C11-3 TCP-Friendly Transmission of Voice over IP
F. Beritelli, G. Ruggeri, G. Schembra, *University of Catania, Italy*

C11-4 Architecture and Design of an Enhanced H.323 VoIP Gateway
T. Dagiuklas, P. Galiotos, *INTRACOM S.A., Greece*

C12 END-TO-END ASPECTS OF QoS

Wednesday 01 May 2002
10:40 - 12:10
Imperial, 5th Floor

Session Chair: Mahmoud Daneshmand, *AT&T, USA*

C12-1 A Critical Review of "End-to-End Arguments in System Design"
Tim Moors, *University of New South Wales, Australia*

C12-2 Efficient Resource Management for End-to-End QoS Guarantees in DiffServ Networks
Spiridon Bakiras, Victor O. K. Li, *The University of Hong Kong, Hong Kong*

C12-3 A Framework of Integrating Network QoS and End System QoS
Chunyan Wang, Chen Khong Tham, *National University of Singapore, Singapore*, Yuming Jiang, *Center for Wireless Communications, Singapore*

C12-4 A Performance Model of a PC Based IP Software Router
Oscar Iván Lepe-Aldama, Jorge García-Vidal, *Universitat Politècnica de Catalunya, Spain*

C13 MULTICAST SERVICES I

Wednesday 01 May 2002
13:40 - 15:10
Carnegie, 5th Floor

Session Chair: Zhisheng Niu, *Tsinghua University, China*

C13-1 An Efficient Key Management Scheme for Secure Wireless Multicast
Yan Sun, Wade Trappe, K. J. Ray Liu, *University of Maryland at College Park, USA*

C13-2 A Reliability Window for Flexible and Scalable Multicast Services
Dah Ming Chiu, *Sun Microsystems Laboratories, USA*, Jaiwant Mulik, *Temple University, USA*

C13-3 Multipoint-to-Multipoint Routing for Multimedia Communication Service
Hideaki Tanioka, Kazuhiko Kinoshita, Koso Murakami, *Osaka University, Japan*

C13-4 Multicast Feedback Control Using Loss-Pattern Matching
Shuju Wu, *University of Pittsburgh, USA*, Sujata Banerjee, *Hewlett-Packard Laboratories and University of Pittsburgh, USA*

C13-5 QoS-Aware Multicast Protocol Using Bounded Flooding (QMBF) Technique
Zhi Li, Prasant Mohapatra, *University of California at Davis, USA*

C14 BANDWIDTH MANAGEMENT I

Wednesday 01 May 2002
13:40 - 15:10
Imperial, 5th Floor

Session Chair: Clayton Lockhart, *AT&T, USA*

C14-1 Performance Analysis of Stochastic Fair Sharing (SFS) Scheme for Link Sharing
R. Manivasakan, Mounir Hamdi, Danny H. K. Tsang, *Hong Kong University of Science and Technology, Hong Kong*

C14-2 Active Queue Control Scheme for Achieving Approximately Fair Bandwidth Allocation
Takashi Miyamura, Takashi Kurimoto, Michihiro Aoki, *NTT Network Service Systems Laboratories, Japan*, Kenji Nakagawa, Prasad