

E01-1 Applying a Policy-based Framework to Manage Quality of Service Requirements in the Virtual Home Environment
Alvin Yew, Antonio Liotta, George Pavlou, University of Surrey, UK

E01-2 Service Provision and Resource Discovery in the VESPER VHE
José André Moura, José Manuel Oliveira, Eurico Carrapatoso, INESC Porto, Portugal, Renato Roque, Portugal Telecom Inovação, Portugal

E01-3 Extending VHE with the Device Unifying Service
Erik Vanem, Dao Van Tran, Tore E. Jønvik, Do Van Thanh, Telenor R&D, Norway

E02 ENABLERS FOR VHE

Monday 29 April 2002
10:40 - 12:10

Imperial, 5th Floor

Session Chair: Jong-Tae Park, *Kyungpook University, Korea*

E02-1 Next Generation Service Creation Using XML Scripting Languages
John-Luc Bakker, Ravi Jain, Telcordia Technologies, USA

E02-2 A High Level Service Creation Environment for Parlay in an SIP Environment
Roch H. Glitho, Andre Poulin, Ericsson Research Canada, Canada, Ferhat Khendek, Concordia University, Canada

E02-3 Schemes for Updating Mobile Service Agents in Virtual Home Environment
Thierno Bah, Samuel Pierre, École Polytechnique de Montréal, Canada, Roch H. Glitho, Ericsson Research Canada, Canada

E02-4 IPMSA: Integrated Personal Mobility Services Architecture
A. Mingkhwan, M. Merabti, B. Askwith, Liverpool John Moores University, UK

E03 MANAGEMENT IN VHE

Monday 29 April 2002
13:40 - 15:10

Imperial, 5th Floor

Session Chair: Fawzi Daoud, *CRL, Japan*

E03-1 Analysis and Optimization of a Transparent Multicast Mobility Support in Cellular Systems
A. Giovanardi, G. Mazzini, M. Rossi, University of Ferrara, Italy

E03-2 Mobility and Its Impact on the Performance of Hierarchical Multicast Retransmission
Youngkook Kim, Saewoong Bahk, Seoul National University, Korea

E03-3 Architectural Framework for Large-Scale Multicast in Mobile Ad Hoc Networks
Ahmed Helmy, University of Southern California, USA

E03-4 ADS+: An Efficient Binding Update Delivery Scheme Using IP Multicast
Kwan -Wu Chin, Motorola Australia, Australia, Fachmin Folianto, National University of Singapore, Singapore, Mohan Kumar, The University of Texas at Arlington, USA

E04 PERFORMANCE, SECURITY, AND APPLICATIONS IN VHE

Monday 29 April 2002
15:30 - 17:00

Imperial, 5th Floor

Session Chair: Pradeep Ray, *University of New South Wales, Australia*

E04-1 Factors Affecting the Performance of Ad Hoc Networks

Dmitri D. Perkins, Herman D. Hughes, Charles B. Owen, Michigan State University, USA

E04-2 Minimizing Energy Consumption of Secure Wireless Session with QoS Constraints

Ramesh Karri, Piyush Mishra, Polytechnic University, USA

E04-3 A Security Architecture for Application Session Handoff

Erik Skow, Jiejun Kong, Thomas Phan, Fred Cheng, Richard Guy, Rajive Bagrodia, Mario Gerla, Songwu Lu, University of California at Los Angeles, USA

E04-4 Mobility amongst Heterogeneous Networks with AAA Support

M. Cappiello, University of Rome "La Sapienza", Italy, A. Floris, L. Veltri, CoRiTel, Italy

E05 ROAMING SUPPORT FOR VHE

Tuesday 30 April 2002
10:40 - 12:10

Imperial, 5th Floor

Session Chair: Dan Keun Sung, *KAIST, Korea*

E05-1 Global Roaming Management in the Next-Generation Wireless Systems

Ronald Beaubrun, Samuel Pierre, Paola Flocchini, Jean Conan, École Polytechnique de Montréal, Canada

E05-2 Global Mobility Approach with Mobile IP in "All IP" Networks

L. Morand, France Telecom R&D, France, S. Tessier, T-Nova Deutsche Telekom Innovationsgesellschaft mbH, Berkom, Germany

E05-3 A Simple Swap Technique and Enhanced GTT Location Database Management Scheme

Kuo-Hsing Chiang, RMIT University, Australia, Nirmala Shenoy, Rochester Institute of Technology, USA

E05-4 Virtual Bluetooth™ Devices as a Means of Extending Pairing and Bonding in a Bluetooth Network

Jim Beasley, James Fuhring, Jim Jollota, Duke Kamstra, Spencer Stephens, Strix Systems Inc., USA

F. HIGH-SPEED NETWORKS SYMPOSIUM

Technical Program Committee:

Co-Chair: Ibrahim Habib, *City University of New York, USA*

Co-Chair: Andrzej Jajszczyk, *AGH University of Technology, Poland*

Oreste Andrisano, *University of Bologna, Italy*

Daniel Awduche, *Movaz Networks, USA*

Greg Bernstein, *Ciena Networks, USA*

Horst Besier, *Deutsche Telekom, Germany*

Jonathan Chao, *Polytechnic University, USA*

Tom Chen, *Southern Methodist University, USA*

Franco Davoli, *DIST-University of Genoa, Italy*

Christos Douligeris, *University of Piraeus, Greece*

Andrea Fumagalli, *University of Texas at Dallas, USA*

Joan Garcia-Haro, *Polytechnic University of Cartagena, Spain*

Erol Gelenbe, *University of Central Florida, USA*

Mario Gerla, *UCLA, USA*

Nasir Ghani, *Sorrento Networks*

Moshen Guizani, *University of West Florida, USA*

Anant Kumar Jain, *Lucent Technologies*

Wojciech Kabacinski, *Poznan University of Technology, Poland*

Miguel Labrador, *University of South Florida, USA*

Marco Ajmone Marsan, *Politecnico di Torino, Italy*

Nader Mir, *University of Kentucky, USA*

Sergio Palazzo, *University of Catania, Italy*

Zdzislaw Papir, *AGH University of Technology, Poland*

Franco Vatalaro, *University of Rome at Tor Vergata, Italy*

Naoaki Yamanaka, *NTT, Japan*

Sponsoring Technical Committee:

Communications Switching and Routing, Computer Communications

F01 HIGH-SPEED SWITCHES AND ROUTERS 1

Monday 29 April 2002
8:50 - 10:20

O'Neill, 4th Floor

Session Chair: Wojciech Kabacinski, *Poznan University of Technology, Poland*

F01-1 Design of Non-Blocking Permutation Generator

Joo-young Lee, Jae-il Jung, Hanyang University, Korea

F01-2 MSN Type-X: Next Generation Internet Backbone Switch / Router Architecture

Naoaki Yamanaka, NTT Innovation Laboratories, Japan, Takashi Kurimoto, Takashi Miyamura, Michihiro Aoki, NTT Network Service Systems Laboratories, Japan

F01-3 A Packet Switch with Bufferless Switch Cards and Partial Distribution of VOQ-state Information to Parallel Arbiters

A. M. M. Leikens, H.- J. Reumerman, J. Ungermann, A. van Wageningen, Philips Research Laboratories, Germany

F01-4 A 2-Stage Matching Scheduler for a VOQ Packet Switch Architecture
Ying Jiang, Suntek Technology Co., Ltd., China, Mounir Hamdi, Hong Kong University of Science and Technology, Hong Kong

F02 HIGH-SPEED SWITCHES AND ROUTERS 2

Monday 29 April 2002

10:40 - 12:10

O'Neill, 4th Floor

Session Chair: Wojciech Kabacinski, *Poznan University of Technology, Poland*

F02-1 The Compound VC switch: A non-VC Merge ATM Multicast Switch

Josep Mangués-Bafalluy, Jordi Domingo-Pascual, Technical University of Catalunya, Spain

F02-2 Evaluation of Open-Loop Sequence Control Schemes for Multipath Switches

Denis Khotimsky, Santosh Krishnan, Bell Laboratories, USA

F02-3 PCRRD: A Pipeline-based Concurrent Round-Robin Dispatching Scheme for Clos-Network Switches

Eiji Oki, NTT Network Innovation Laboratories, Japan, Roberto Rojas-Cessa, H. Jonathan Chao, Polytechnic University, USA

F02-4 Convex Optimization of Output Link Scheduling and Active Queue Management in QoS Constrained Packet Switches

Mung Chiang, Bernard L. F. Chan, Steven Boyd, Stanford University, USA

F03 NETWORK DESIGN AND ANALYSIS

Monday 29 April 2002

13:40 - 15:10

O'Neill, 4th Floor

Session Chair: Romano Fantacci, *University of Florence, Italy*

F03-1 An Integrated DWDM Optical Network Design with Traffic Grooming

John Yu, Centerpoint Eileen Zhou, Centerpoint Broadband Technologies, Inc., USA

F03-2 A Proposal for an Ethernet-over-WDM Wide Area Multiplexing Architecture

Guido Gilardi, Achille Pattavina, Giacomo Verticale, Politecnico di Milano, Italy

F03-3 Proposal of Free Space Optical Mesh Network Architecture for Broadband Access

Jinlong Zhang, Nokia Networks, Finland

F03-4 On Performance Prediction of Address Lookup Algorithms of IP Routers through Simulation and Analysis Techniques

Ryo Kawabe, Shingo Ata, Masayuki Murata, Osaka University, Japan, Masanori Uga, NTT Network Service Systems Laboratories, Japan, Kohei Shiimoto, Naoaki Yamanaka, NTT Network Innovation Laboratories, Japan

F04 NETWORK SURVIVABILITY AND RELIABILITY

Monday 29 April 2002

15:30 - 17:00

O'Neill, 4th Floor

Session Chair: Nasir Ghani, *Sorrento Networks Inc., USA*

F04-1 QoS Provision with Path Protection for Next Generation SONET

Nirwan Ansari, Gang Cheng, Yuanqiu Luo, Li Zhu, New Jersey Institute of Technology, USA, Stephen Israel, Jonathan Ma, OpenCon Communication Systems, Inc., USA

F04-2 Shared Path Protection with Differentiated Reliability

Andrea Fumagalli, Marco Tacca, Ferenc Ungváry, Andrés Faragó, *University of Texas at Dallas, USA*

F04-3 Algorithms for Budget-Constrained Survivable Topology Design

Nikhil Garg, Rahul Simha, The George Washington University, USA, Wenxun Xing, Tsinghua University, China

F04-4 A Family of Algorithms for Network Reliability Problems

Jack Shaio, Vivace Networks, USA

F05 HIGH-SPEED SWITCHES AND ROUTERS 3

Tuesday 30 April 2002

10:40 - 12:10

O'Neill, 4th Floor

Session Chair: Naoaki Yamanaka, *NTT Network Innovation Laboratories, Japan*

F05-1 Multi-Log2+N Switching Networks for High-Speed Switching

Wojciech Kabacinski, Mariusz Zal, Poznan University of Technology, Poland

F05-2 A Scalable Multistage Packet Switch for Terabit IP Router Based on Deflection Routing and Shortest Path Routing

Hiroaki Morino, Tadao Saito, *Chuo University, Japan*, Thai Thach Bao, *NEC Corporation, Japan*, Nguyen Hoaison, Hitoshi Aida, *University of Tokyo, Japan*

F05-3 Efficient Design of RED Routers for TCP/RAP Fairness Optimization

Fernando Menta, Giovanni Schembra, University of Catania, Italy

F05-4 A Trace Driven Study of Packet Level Parallelism

Huan Liu, Stanford University, USA

F06 NETWORK SECURITY AND MONITORING

Tuesday 30 April 2002

13:40 - 15:10

O'Neill, 4th Floor

Session Chair: Christos Douligeris, *University of Piraeus, Greece*

F06-1 High Speed LSI Processing for the RSA Cryptogram

Yoshinori Fujisawa, Nagano National College of Technology, Japan, Yasushi Fuwa, Youhei Yamazaki, Shinshu University, Japan

F06-2 Establishment of Conference Keys in Heterogeneous Networks

Wade Trappe, Yuke Wang, K. J. Ray Liu, University of Maryland at College Park, USA

F06-3 A Framework on Gigabit Rate Packet Header Collection for Low-Cost Internet Monitoring System

Teruyuki Hasegawa, Tomohiko Ogishi, Toru Hasegawa, KDDI R&D Laboratories Inc., Japan

F06-4 Efficient Parameter Selection for Use of Self-similarity in Real Time Resource Management

Zafer Sahinoglu, Mitsubishi Electric Research Labs, USA, Sirin Tekinay, New Jersey Institute of Technology, USA

F07 ROUTING IN HIGH-SPEED NETWORKS 1

Tuesday 30 April 2002

13:40 - 15:10

Booth, 5th Floor

Session Chair: Anant Kumar Jain, *Lucent Technologies, USA*

F07-1 QoS Routing Algorithms for Multiple Traffic Classes

Yun-Wen Chen, Ren-Hung Hwang, National Chung Cheng University, Taiwan

F07-2 The Enhanced Ticket-based Routing Algorithm

Li Xiao, Jun Wang, Klara Nahrstedt, University of Illinois at Urbana-Champaign, USA

F07-3 Path Selection in Networks with Non-Deterministic Information

E. Korach, R. Ohayon, Ben-Gurion University of the Negev, Israel

F07-4 Efficiency Analyses on Routing Cache Replacement Algorithms

Woei-Luen Shyu, Cheng-Shong Wu, Ting-Chao Hou, National Chung-Cheng University, Taiwan

F08 RESOURCE ALLOCATION IN HIGH-SPEED NETWORKS

Tuesday 30 April 2002

15:30 - 17:00

O'Neill, 4th Floor

Session Chair: Kohei Shiimoto, *NTT Network Innovation Laboratories, Japan*

F08-1 Cost Minimization Study of Semi-Elastic Flows Using Internet

Marcos Postigo-Boix, Mónica Aguilar-Igartua, Polytechnic University of Catalonia, Spain, Joan Garcia-Haro, Polytechnic University of Cartagena, Spain

F08-2 Periodic Bandwidth Allocation Based on Virtual Queue Occupancy

Jingdi Zeng, Nirwan Ansari, New Jersey Institute of Technology, USA

F08-3 Dynamic Bandwidth Allocation Protocol for Hierarchically Compressed Video in ATM Networks

Majdi Ashibani, D. Mashao, B. Nleya, University of Cape Town, South Africa

F08-4 Dynamic Random Channel Allocation Scheme in HiperLAN Type 2

Gyung-Ho Hwang, Dong-Ho Cho, Korea Advanced Institute of Science and Technology, Korea

F09 ROUTING IN HIGH-SPEED NETWORKS 2

Tuesday 30 April 2002

15:30 - 17:00

Booth, 5th Floor

Session Chair: Anant Kumar Jain, *Lucent Technologies, USA*

F09-1 A Destination-Driven Shortest Path Tree Algorithm

Baoxian Zhang, H. T. Mouftah, Queen's University, Canada

F09-2 An IP Packet Forwarding Technique Based on Partitioned Lookup Table

Mohammad J. Akhbarizadeh, Mehrdad Nourani, The University of Texas at Dallas, USA

F09-3 QoS Routing under Adversarial Binary Uncertainty

V. Marbukh, National Institute of Standards and Technology, USA

F09-4 Performance Evaluation of Delay-Constrained Least-Cost QoS Routing Algorithms Based on Linear and Nonlinear Lagrange Relaxation

Gang Feng, Kia Makki, Niki Pissinou, Florida International University, USA, Christos Douligeris, University of Piraeus, Greece

F10 PERFORMANCE EVALUATION

Wednesday 01 May 2002
8:50 - 10:20
O'Neill, 4th Floor

Session Chair: Nader Mir, *San Jose State University, USA*

F10-1 Performance of Random Multiple Access Scheme Under Long-Range-Dependent Traffic

Jianbo Gao, Izhak Rubin, University of California at Los Angeles, USA

F10-2 A New Technique for Performance Evaluation of Random Access Protocols
Chuan Heng Foh, Moshe Zukerman, The University of Melbourne, Australia

F10-3 Performance Evaluation of Two GMPLS-based Distributed Control and Management Protocols for Dynamic Lightpath Provisioning in Future IP Optical Networks

Abdallah Shami, Chadi Assi, Ibrahim Habib, M. A. Ali, City College of the City University of New York, USA

F10-4 The Optimal Connection Preemption Algorithm in a Multiclass Network
Sung-eok Jeon, Randal T. Abler, Ana E. Goulart, Georgia Institute of Technology, USA

F11 NETWORK PLANNING AND DESIGN

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

Session Chair: Nirwan Ansari, *New Jersey Institute of Technology, USA*

F11-1 Simple Models and their Limits for TCP/IP Network Analysis and Dimensioning
Andrea Baiocchi, Andrea De Vendictis, Alessia Monticelli, University of Roma "La Sapienza", Italy

F11-2 Link Capacity Dimensioning and Path Optimization for Networks Supporting Elastic Services
Gábor Malicskó, Ericsson Traffic Laboratory, Hungary, Gábor Fodor, Ericsson Research, Sweden, Michal Pióro, Lund Institute of Technology, Sweden

F11-3 On the Effectiveness of Restoration Path Computation Methods
Balázs Szviatovszki, Áron Szentesi, Alpar Jüttner, Ericsson Research, Hungary

F11-4 Computing Path-Tables of Quickest Paths under Different Routing Mechanisms
William C. Grimmell, Nageswara S. V. Rao, Oak Ridge National Laboratory, USA

F12 TRAFFIC CONTROL AND MANAGEMENT

Wednesday 01 May 2002
10:40 - 12:10
O'Neill, 4th Floor

Session Chair: Nader Mir, *San Jose State University, USA*

F12-1 Dynamic Bandwidth Allocation for Streaming MPEG Coded Video over ATM Networks
Preslav Markov, Hassan Mehrpour, University of New South Wales, Australia

F12-2 An Enhanced Marking Strategy for Explicit Congestion Notification in the Internet
Byung-Chul Kim, Young-Soo Choi, You-Ze Cho, Kyungpook National University, Korea

F12-3 TCP Increase/Decrease Behavior with Explicit Congestion Notification (ECN)
Minseok Kwon, Sonia Fahmy, *Purdue University, USA*

F12-4 MCA: A Rate-based End-to-End Multicast Congestion Avoidance Scheme
Jiang Li, Shivkumar Kalyanaraman, Rensselaer Polytechnic Institute, USA

F13 QUALITY OF SERVICE

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

Session Chair: Christos Douligeris, *University of Piraeus, Greece*

F13-1 Dynamic Fair Bandwidth Allocation for DiffServ Classes
Hideyuki Shimonishi, Tutomu Murase, NEC corporation, Japan, Ichinoshin Maki, Masayuki Murata, Osaka University, Japan

F13-2 A Probe-based Server Selection Protocol for Differentiated Service Networks
Meng Guo, Mostafa H. Ammar, Ellen W. Zegura, Georgia Institute of Technology, USA, Fang Hao, Lucent Technologies, USA

F13-3 IRED: A Router Algorithm for Supporting Integrated Services in the Internet
Jian-Hao Hu, Kwan L. Yeung, The University of Hong Kong, Hong Kong

F13-4 Proportional QoS Provision: A Uniform and Practical Solution
Yang Chen, C. Gao, State University of New York at Buffalo, USA, Mounir Hamdi, Danny H. K. Tsang, Hong Kong University of Science and Technology, Hong Kong

F14 SCHEDULING AND BUFFER MANAGEMENT 1

Wednesday 01 May 2002
13:40 - 15:10
O'Neill, 4th Floor

Session Chair: Joan Garcia-Haro, *Polytechnic University of Cartagena, Spain*

F14-1 GREEN: An Active Queue Management Algorithm for a Self Managed Internet
Bartek Wyrowski, Moshe Zukerman, University of Melbourne, Australia

F14-2 Throughput of Crossbar Switches Using Maximal Matching Algorithms
Kent D. Benson, Tellabs Research Center, USA

F14-3 Dynamically Weighted Queueing for Fair Bandwidth Allocation and Its Performance Analysis
Ryoichi Kawahara, NTT Service Integration Laboratories, Japan, Naohisa Komatsu, Waseda University, Japan

F14-4 A Simple and Effective Scheduling Mechanism Using Minimized Cycle Round Robin
Yao Liang, Virginia Polytechnic Institute and State University, USA

F15 TRAFFIC ENGINEERING 1

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

Session Chair: Miguel Labrador, *University of South Florida, USA*

F15-1 A Simulation Study on the Relevant Time Scales of the Input Traffic for a Tandem Network
A. Nogueira, R. Valadas, *University of Aveiro, Portugal*

F15-2 Application of Multifractals in the Characterization of WWW Traffic
Abdullah Balamash, Marwan Krunz, University of Arizona, USA

F15-3 Extensions to Multifractal Wavelet Model for Synthesizing Network Traffic
Logeshwaran Vijayan, Swapan Chakrabarti, David W. Petr, University of Kansas, USA, Sohail Khan, Sprint, USA

F15-4 Characterizing and Modeling Network Traffic Variability
Sarat Pothuri, David W. Petr, University of Kansas, USA, Sohail Khan, Sprint, USA

F16 SCHEDULING AND BUFFER MANAGEMENT 2

Wednesday 01 May 2002
15:30 - 17:00
O'Neill, 4th Floor

Session Chair: Joan Garcia-Haro, *Polytechnic University of Cartagena, Spain*

F16-1 Scheduling Unsplittable Flows Using Parallel Switches
Saad Mneimneh, Kai-Yeung Siu, Massachusetts Institute of Technology, USA

F16-2 Impact of Scheduling Algorithms on Performances of Buffered Crossbar Switch Fabrics
Igor Radusinovic, Milica Pejanovic, University of Montenegro, Yugoslavia, Zoran Petrovic, University of Belgrade, Yugoslavia

F16-3 A New Active Queue Management Algorithm Based on the Rate and Burstiness Estimation
Youquan Zheng, Zhenming Feng, Tsinghua University, China

F16-4 Queueing Analysis of Early Message Discard Policy
Parijat Dube, Eitan Altman, Project MISTRAL, INRIA, France

F17 TRAFFIC ENGINEERING 2

Wednesday 01 May 2002
15:30 - 17:00
Booth, 5th Floor

Session Chair: Miguel Labrador, *University of South Florida, USA*

F17-1 A Constrained Multipath Traffic Engineering Scheme for MPLS Networks
Youngseok Lee, Yongho Seok, Yanghee Choi, Seoul National University, Korea, Changhoon Kim, Electronics and Telecommunications Research Institute, Korea

F17-2 A Case Study on Evaluating the Benefits of MPLS Traffic Engineering through Constraint-based Routing and Network Controls
S. Srivastava, B. Krithikaivasan, V. Venkatachalam, C. Beard, D. Medhi, A. van de Liefvoort, University of Missouri-Kansas City, USA, W. Alanqar, A. Nagarajan, Sprint Corporation, USA

F17-3 Inter-Domain Router Placement and Traffic Engineering
Fung Lam, Wing Cheong Lau, Victor O. K. Li, The University of Hong Kong, Hong Kong

F17-4 Self-similar Traffic Shaping at the Edge Router in Optical Packet-switched Networks
Fei Xue, S. J. Ben Yoo, University of California at Davis, USA