

I. OPTICAL NETWORKING SYMPOSIUM

Technical Program Committee:

- Chair:* Hussein Mouftah, *Queen's University, Canada*
 Peter Arijs, *OPNET Technologies, Belgium*
 M. Atiquzzaman, *Univ Oklahoma, USA*
 Mario Baldi, *Synchrodyne Net, USA*
 L. Benmohamed, *Corvis, USA*
 D. Blumenthal, *Univ California, Santa Barbara, USA*
 Thomas Chen, *Southern Methodist Univ, USA*
 Imrich Chlamtac, *Univ of Texas, Dallas, USA*
 Jacek Chrostowski, *Cisco, Canada*
 Piet Demeester, *Univ. of Gent, Belgium*
 Sudhir Dixit, *Nokia, USA*
 M. Ilyas, *Florida Atlantic Univ, USA*
 Tarek El-Bawab, *Alcatel, USA*
 Jeff Fitchett, *Nortel Networks, Canada*
 Nasir Ghani, *Sorrento Networks*
 Mounir Hamdi, *Hong Kong Univ Science & Technology, Hong Kong*
 P. Harshavardhana, *VPI, USA*
 Raj Jain, *Nayna Networks, USA*
 Bilal Jamoussi, *Nortel Networks, Canada*
 Victor Li, *Univ of Hong Kong, Hong Kong*
 Chunming Qiao, *University of Buffalo, USA*
 Ramu Ramamurthy, *Tellium, USA*
 Brunilde Sanso, *Ecole Polytechnique of Montreal, Canada*
 Ken ichi Sato, *NTT, Japan*
 Kris Stuyve, *Tellium, Belgium*
 Nico Wauters, *Tellium, Belgium*
 Oliver Yang, *University of Ottawa, Canada*

Sponsoring Technical Committee:

- Computer Communications, Communication Switching and Routing, Communications Systems Integration and Modeling, Gigabit Networking and Optical Networking*

IO1 OPTICAL BURST SWITCHING

Monday 29 April 2002
 8:50 - 10:20

Broadhurst, 5th Floor

Session Chair: Sudhir Dixit, *Nokia, USA*

IO1-1 Burst Segmentation: An Approach for Reducing Packet Loss in Optical Burst Switched Networks

Vinod M. Vokkarane, Jason P. Jue, Srikanth Sitaraman, University of Texas at Dallas, USA

IO1-2 Contention Resolution for Optical Burst Switching Networks Using Alternative Routing

Sungchang Kim, Namook Kim, Minho Kang, Information and Communications University, Korea

IO1-3 Investigation of the Time-Offset-Based GoS Support with Optical Burst Switching in WDM Networks

Pingyi Fan, Chongxi Feng, Yichao Wang, Ning Ge, Tsinghua University, China

IO1-4 Optical Burst Switching with Burst Drop(OBS/BD): An Easy OBS Improvement
 A. Detti, University of Rome "Tor Vergata", Italy, V. Eramo, M. Listanti, University of Rome "La Sapienza", Italy

IO2 GMPLS IN WDM NETWORKS

Monday 29 April 2002
 10:40 - 12:10

Broadhurst, 5th Floor

Session Chair: Lofti Benmohamed, *Corvis, USA*

IO2-1 Fractional Lambda Switching™
 Mario Baldi, Yoram Ofek, Synchrodyne Networks, Inc., USA

IO2-2 Path Selection with Tunnel Allocation in the Optical Internet Based on Generalized MPLS Architecture
 Pin-Han Ho, Hussein T. Mouftah, Queen's University, Canada

IO2-3 Reroute Sequence Planning for Protected Traffic Flows in GMPLS Networks
 Balázs Gábor Józsa, Ericsson Research Hungary, Hungary

IO2-4 Study of GMPLS Lightpath Setup over Lambda-Router Networks
 Indra Widjaja, Anwar I. Elwalid, Lucent Technologies, USA

IO3 OPTICAL NETWORK MANAGEMENT

Monday 29 April 2002
 13:40 - 15:10

Broadhurst, 5th Floor

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

IO3-1 Centralized vs. Distributed Connection Management Schemes under Different Traffic Patterns in Wavelength-Convertible Optical Networks
 Lu Shen, Byrav Ramamurthy, University of Nebraska-Lincoln, USA

IO3-2 Information Model of an Optical Burst Edge Switch
 Chao Kan, Halt Balt, Stephane Michel, Dominique Verchre, Alcatel USA, USA

IO3-3 Routing and Wavelength Assignment for Advance Reservation in Wavelength-Routed WDM Optical Networks
 Jun Zheng, Hussein T. Mouftah, Queen's University, Canada

IO3-4 Hierarchical Routing in Layered Ring and Mesh Optical Networks
 Y. Suemura, I. Nishioka, Y. Maeno, S. Araki, R. Izmailov, S. Ganguly, NEC USA Inc., USA

IO4 ROUTING AND WAVELENGTH ASSIGNMENT ALGORITHMS

Monday 29 April 2002
 15:30 - 17:00

Broadhurst, 5th Floor

Session Chair: Jacek Chrostowski, *Cisco, Canada*

IO4-1 An Efficient Heuristic for Routing and Wavelength Assignment in Optical WDM Networks
 Yongbing Zhang, Koji Taira, Hideaki Takagi, University of Tsukuba, Japan, Sajal K. Das, The University of Texas at Arlington, USA

IO4-2 Fast Optimum Routing and Wavelength Assignment for WDM Ring Transport Networks
 Martin Knoke, Harro L. Hartmann, Technical University Braunschweig, Germany

IO4-3 Adaptive Least Loaded Routing for Multifiber WDM Networks Using Approximate Congestion Information
 Bin Zhou, Hussein T. Mouftah, Queen's University, Canada

IO4-4 Practical Routing and Wavelength Assignment Algorithms for all Optical Networks with Limited Wavelength Conversion
 M. D. Swaminathan, Intel Corporation, USA, K. N. Sivarajan, Tejas Network, India

IO5 OPTICAL NETWORK PROTECTION/RESTORATION

Tuesday 30 April 2002
 10:40 - 12:10

Broadhurst, 5th Floor

Session Chair: Biswanath Mukherjee, *University of California-Davis, USA*

IO5-1 Finding Protection Cycles in DWDM Networks
 Hanxi Zhang, Oliver Yang, University of Ottawa, Canada

IO5-2 Optimal Configuration of p-Cycles in WDM Networks
 D. A. Schupke, C. G. Gruber, A. Autenrieth, Munich University of Technology, Germany

IO5-3 GoS Issues in Redundant Trees for Protection in Vertex-Redundant or Edge-Redundant Graphs
 Guoliang Xue, Arizona State University, USA, Li Chen, University of Vermont, USA, K. Thulasiraman, University of Oklahoma, USA

IO5-4 Survivable Routing in WDM Networks—Logical Ring in Arbitrary Physical Topology
 Arunabha Sen, Bin Hao, Bao Hong Shen, Guohui Lin, Arizona State University, USA

IO6 DEFLECTION ROUTING AND RECONFIGURABLE WDM NETWORKS

Tuesday 30 April 2002
 13:40 - 15:10

Imperial, 5th Floor

Session Chair: Victor Li, *University of Hong Kong, Hong Kong*

IO6-1 An Algorithm for Loopless Deflection in Photonic Packet-Switched Networks
 Jason P. Jue, The University of Texas at Dallas, USA

IO6-2 Deflection Routing in Slotted Self-Routing Networks with Arbitrary Topology
 C. Y. Li, P. K. A. Wai, The Hong Kong Polytechnic University, Hong Kong, X. C. Yuan, Victor O. K. Li, The University of Hong Kong, Hong Kong

IO6-3 On the Deflection Routing in GoS Supported Optical Burst-Switched Networks
 Ching-Fang Hsu, Te-Lung Liu, Nen-Fu Huang, National Tsing-Hua University, Taiwan

IO7 OPTICAL NETWORKING ISSUES

Tuesday 30 April 2002
 13:40 - 15:10

Broadhurst, 5th Floor

Session Chair: G.S. Kuo, *National Chengchi University, Taiwan*

IO7-1 CRC-16 Polynomials Optimized for Applications Using Self-Synchronous Scramblers
 Steven S. Gorshe, PMC-Sierra, Inc., USA

I07-2 Dynamic Routing in Translucent WDM Optical Networks

Xi Yang, Byrav Ramamurthy, University of Nebraska-Lincoln, USA

I07-3 Insecurity in ATM-based Passive Optical Networks

Stephen Thomas, Wave7 Optics, USA, David Wagner, *University of California at Berkeley, USA*

I07-4 Performance of a Slotted MAC Protocol for WDM Metropolitan Access Ring Networks under Self-Similar Traffic

Christophe S. Jelger, Jaafar M. H. Elmighani, University of Wales Swansea, UK

I08 PLANNING AND DESIGN OF OPTICAL NETWORKS

Tuesday 30 April 2002
15:30 - 17:00

Broadhurst, 5th Floor

Session Chair: Mohammad Ilyas, *Florida Atlantic University, USA*

I08-1 An Analytical Model for Predicting the Locations and Frequencies of 3R Regenerations in All-Optical Wavelength-Routed WDM Networks

N. Barakat, A. Leon-Garcia, University of Toronto, Canada

I08-2 Cost Optimal Optical Ring Design with Ring-Interworking Constraints

Olga Raskina, Columbia University, USA, Ramesh Nagarajan, Bell Laboratories, USA

I08-3 Dimensioning Optical Networks under Traffic Growth Models

Tapan Kumar Nayak, Indian Institute of Science, India, Kumar N. Sivarajan, Tejas Networks, India

I08-4 Impact of Graph Theoretic Network Parameters on the Design of Regular Virtual Topologies for Optical Packet Switching

Olufemi Komolafe, David Harle, University of Strathclyde, UK, David Cotter, Corning Research Centre, UK

I09 OPTICAL SWITCH ROUTERS AND CROSS-CONNECTS

Wednesday 01 May 2002
8:50 - 10:20

Broadhurst, 5th Floor

Session Chair: Mounir Hamdi, *Hong Kong Univ Science & Technology, Hong Kong*

I09-1 A Distributed Semi-Rearrangeable Nonblocking Path Hunt Algorithm for Clos Networks with TDM Links

Siamack Ayandeh, Onex Communications Corporation, USA

I09-2 Contention Resolution using Multistage Fiber Delay Line Buffer in a Photonic Packet Switch

Hiroaki Harai, Naoya Wada, Fumito Kubota, Wataru Chujo, Communications Research Laboratory, Japan

I09-3 Micromachined L-Switching Matrix

T. W. Yeow, K. L. E. Law, A. A. Goldenberg, University of Toronto, Canada

I09-4 Sparse Converter Placement in WDM Networks and Their Dynamic Operation Using Path-Metric Based Algorithms

Sanjay K. Bose, Y. N. Singh, *Indian Institute of Technology, India*, A. N. V. B. Raju, *Samsung India, India*, Bhoomika Popat, Jagdish Bhawan, *India*

I10 ROUTING PROTOCOLS IN OPTICAL NETWORKS

Wednesday 01 May 2002
10:40 - 12:10

Broadhurst, 5th Floor

Session Chair: Byrav Ramamurthy, *University of Nebraska-Lincoln, USA*

I10-1 An Adaptive Routing Strategy for Wavelength-Routed Networks with Wavelength Conversion Capability

Ching-Fang Hsu, Te-Lung Liu, Nen-Fu Huang, National Tsing-Hua University, Taiwan

I10-2 Analysis of Enhanced OSPF for Routing Lightpaths in Optical Mesh Networks

Sudipta Sengupta, Debanjan Saha, Sid Chaudhuri, Tellium, Inc., USA

I10-3 End-To-End Signaling and Routing for Optical IP Networks

Mark Joseph Francisco, Lambros Pezoulas, Changcheng Huang, Ioannis Lambadaris, Carleton University, Canada

I10-4 Request-Specific Routing in WDM Grooming Networks

R. Srinivasan, Arun K. Somani, Iowa State University, USA

I11 QoS SCHEMES FOR WDM NETWORKS

Wednesday 01 May 2002
13:40 - 15:10

Broadhurst, 5th Floor

Session Chair: Marco Ajmone Marsan, *Politecnico di Torino, Italy*

I11-1 Adaptive QoS Schemes in DWDM Networks

C. Ben Ahmed, N. Boudriga, Monmouth University and University of Tunis, USA, M. S. Obaidat, Monmouth University, USA

I11-2 Multicast QoS Traffic Scheduling with Arbitrary Tuning Latencies in Single-Hop WDM Networks

Te-Lung Liu, Ching-Fang Hsu, Nen-Fu Huang, National Tsing-Hua University, Taiwan

I11-3 New QoS Measures for Routing and Wavelength Assignment in WDM Networks

Shi Zhong Xu, Kwan L. Yeung, The University of Hong Kong, Hong Kong

I11-4 Traffic Grooming in WDM Networks with Multilayer Switches

G. Huiban, S. Pérennes, M. Syska, I3S-CNRS/INRIA, France

I12 WAVELENGTH ASSIGNMENT AND MULTICASTING IN WDM NETWORKS

Wednesday 01 May 2002
15:30 - 17:00

Edison, 5th Floor

Session Chair: Oliver Yang, *University of Ottawa, Canada*

I12-1 A Cost-Effective Construction for WDM Multicast Switching Networks

Xiangdong Qin, Yuanyuan Yang, State University of New York at Stony Brook, USA

I12-2 A Simple Routing and Wavelength Assignment Algorithm using the Blocking Island Technique for All-Optical Networks

Ding Zhemin, Mounir Hamdi, Hong Kong University of Science and Technology, Hong Kong

I12-3 Blocking Analysis of Dynamic Lightpath Establishment in Wavelength-Routed Networks

Kejie Lu, Imrich Chlamtac, The University of Texas at Dallas, USA Gaoxi Xiao, Nanyang Technological University, Singapore

I12-4 Wavelength Assignment to Minimize the Number of SONET ADMs in WDM Rings

Xin Yuan, Amit Fulay, Florida State University, USA

I13 CDMA IN OPTICAL NETWORKS

Wednesday 01 May 2002
15:30 - 17:00

Broadhurst, 5th Floor

Session Chair: Moe Win, *AT&T Research Laboratories, USA*

I13-1 Internally Bandwidth Efficient Channel Coding for Fiber-Optic CDMA Communication Systems with Soft-Input Decoding

Paeiz Azmi, Masoumeh Nasiri-Kenari, Jawad A. Salehi, Sharif University of Technology, Iran

I13-2 On the Cutoff Rate of a Variable-Bit-Rate (VBR) OFFH-CDMA System

Elie Inaty, Paul Fortier, Hossam M. H. Shalaby, Laval University, Canada

I13-3 Performance Analysis of Atmospheric Optical CDMA Systems

Tomoaki Ohtsuki, Tokyo University of Science, Japan

I13-4 Turbo-Coded Atmospheric Optical Communication Systems

Tomoaki Ohtsuki, Tokyo University of Science, Japan