CONTENTS

Preface ix

Program Committee x

List of Reviewers xi

PART ONE ATM Multiplexing 1

1 An exact model for the multiplexing of worst case traffic sources
J. Garcia, J.M. Barcelo and O. Casals 3

2 On per-session performance of an ATM multiplexer with heterogeneous speed links
R.I. Balay and A. Nilsson 18

3 Effect of the on-period distribution on the performance of an ATM multiplexer fed by on/off sources: an analytical study
S. Wittevrongel and H. Bruneel 33

PART TWO High-Performance Protocols 49

4 General bypass architecture for high-performance distributed applications
C.M. Woodside and G. Raghunath 51

5 High performance protocol architecture
W. Dabbous and C. Diot 66

6 Enabling high bandwidth applications by high-performance multicast transfer protocol processing
G. Carle and J. Schiller 82

PART THREE Switching 97

7 Performance of an ATM LAN switch with back-pressure function
H. Ohsaki, N. Wakamiya, M. Murata and H. Miyahara 99

8 A study of switch models for the scalable coherent interface
B. Wu, A. Bogaerts and B. Skaali 114

9 Optimization of logically rearrangeable multihop lightwave networks with genetic algorithms
C. Gazen and C. Ersoy 125

PART FOUR Queueing Models 139

10 Closed form performance distributions of a discrete time GIg/D/1/N queue with correlated traffic
D. Kouvatsos and R. Fretwell 141

11 Buffer requirements in ATM related queueing models with bursty traffic: an alternative approach
B. Steyaert and Y. Xiong 164

12 Discrete time analysis of a finite capacity queue with an 'all or nothing policy' to reduce burst loss
J.M. Karlsson and H. Yamashita 179

13 Study of the impact of temporal/spatial correlations on a tagged traffic stream
M. Conti, E. Gregori and I. Stavrakakis 194

PART FIVE Source Modelling 209

14 On the prediction of the stochastic behavior of time series by use of neural networks – performance analysis and results
M. Eberspächer 211

15 The entropy of cell streams as a traffic descriptor in ATM networks
C. Roche and N.T. Plotkin 225

PART SIX Traffic Management 1 241

16 Analytic models for separable statistical multiplexing
K. Ross and V. Vèque 243

17 On the effective bandwidth of arbitrary on/off sources
K.M. Elsayed and H. Perros 257

18 The impact of the reactive functions on the LAN interconnection by a frame-relay net
T. Atmaca and T. Czachórski 272

PART SEVEN Traffic Management 2 287

19 Dimensioning the continuous state leaky bucket for geometric arrivals
A. Dupuis and G. Hébuterne 289

20 On-line bandwidth and buffer allocation for ATM
E. Gelenbe and X. Mang 302

21 ATM traffic analysis and control for ABR service provisioning
N. Mitrou, K.P. Kontovasilis and E.N. Protonotarios 317

PART EIGHT Performance and Optimization of ATM Networks 333

22 Performance evaluation of frame relay, SMDS and best efforts services in ATM networks
L. Fratta and L. Musimeci 335

23 The statistically correct approach to distributed simulation of ATM networks
C.D. Pham and S. Fdida 352

24 An error monitor algorithm for ATM signalling links
K. Kant and J.R. Dobbins 367

25 Virtual path assignment problem in ATM networks
M. Aydemir and Y. Viniotis 382

26 Enhancing ATM network performance by optimizing the virtual network configuration
A. Faragó, S. Blaagjerg, W. Holender, B. Stavenow, T. Henk, L. Ast and S. Székely 401

Index of contributors 415

Keyword index 416