

# [NETWORKING 2000. Broadband Communications, High Performance Networking, and Performance of Communication Networks](#)

IFIP-TC6/European Commission International Conference Paris, France, May 14-19, 2000 Proceedings

Bearbeitet von  
Guy Pujolle, Harry Perros, Serge Fdida, Ulf Körner, Ioannis Stavrakakis

1. Auflage 2000. Taschenbuch. xl, 984 S. Paperback

ISBN 978 3 540 67506 8

Format (B x L): 15,5 x 23,5 cm

Gewicht: 1514 g

[Weitere Fachgebiete > EDV, Informatik > Hardwaretechnische Grundlagen > Netzwerk-Hardware](#)

Zu [Inhaltsverzeichnis](#)

schnell und portofrei erhältlich bei

The logo for beck-shop.de features the text 'beck-shop.de' in a bold, red, sans-serif font. Above the 'i' in 'shop' are three red dots of varying sizes, arranged in a slight arc. Below the main text, the words 'DIE FACHBUCHHANDLUNG' are written in a smaller, red, all-caps, sans-serif font.

**beck-shop.de**  
DIE FACHBUCHHANDLUNG

Die Online-Fachbuchhandlung [beck-shop.de](#) ist spezialisiert auf Fachbücher, insbesondere Recht, Steuern und Wirtschaft. Im Sortiment finden Sie alle Medien (Bücher, Zeitschriften, CDs, eBooks, etc.) aller Verlage. Ergänzt wird das Programm durch Services wie Neuerscheinungsdienst oder Zusammenstellungen von Büchern zu Sonderpreisen. Der Shop führt mehr als 8 Millionen Produkte.

## Preface

This was the first conference jointly organized by the IFIP Working Groups 6.2, 6.3, and 6.4. Each of these three Working Groups has its own established series of conferences. Working Group 6.2 sponsors the *Broadband Communications* series of conferences (Paris 1995, Montreal 1996, Lisboa 1997, Stuttgart 1998, and Hong-Kong 1999). Working Group 6.3 sponsors the *Performance of Communication Systems* series of conferences (Paris 1981, Zürich 1984, Rio de Janeiro 1987, Barcelona 1990, Raleigh 1993, Istanbul 1995, and Lund 1998). Working Group 6.4 sponsors the *High Performance Networking* series of conferences (Aaren 1987, Liège 1988, Berlin 1990, Liège 1992, Grenoble 1994, Palma 1995, New York 1997, Vienna 1998). It is expected that this new joint conference will take place every two years.

In view of the three sponsoring Working Groups, there were three separate tracks, one per Working Group. Each track was handled by a different co-chairman. Specifically, the track of Working Group 6.2 was handled by Ulf Körner, the track of Working Group 6.3 was handled by Ioanis Stavrakakis, and the track of Working Group 6.4 was handled by Serge Fdida. The overall program committee chairman was Harry Perros, and the general conference chairman was Guy Pujolle.

A total of 209 papers were submitted to the conference of which 82 were accepted. Each paper was submitted to one of the three tracks. Papers within each track were reviewed separately, and the decision as to which papers to accept was taken separately within each track. For presentation purposes, most of the sessions in the final program were made up by mixing papers from the three tracks.

The program covers a variety of research topics which are of current interest, such as wireless networks, optical networks, switching architectures, residential access networks, signaling, voice and video modelling, congestion control, call admission control, QoS, TCP/IP over ATM, interworking of IP and ATM, internet protocols, differentiated services, routing, multicasting, real-time traffic management, resource management and allocation, and performance modelling.

## VI Preface

We would like to thank the program committee members and the referees. Without their dedication and hard work this conference would not have materialized. We are also indebted to our two web masters Costas Tsibanis and Dimitris Koutoulas (with special thanks to Costas) at the Network Operation Center of the University of Athens, for setting-up and managing the conference's web site.

March 2000

Guy Pujolle  
Harry Perros  
Serge Fdida  
Ulf Körner  
Ioannis Stavrakakis

## **Executive Committee**

### **General Chair**

*Guy Pujolle - France*

### **Steering Committee**

*André Danthine - Belgium*

### **General Manager**

*Eric Horlait - France*

### **Technical Program Chair**

*Harry Perros - USA*

### **Special Program Chair: Broadband Communications**

*Ulf Körner*

### **Special Program Chair: Performance of Communication Systems**

*Ioannis Stavrakakis - Greece*

### **Special Program Chair: High Performance Networking**

*Serge Fdida - France*

### **Publicity Program Chair**

*Raouf Boutaba - Canada*

### **Tutorial Chair**

*Eric Horlait - France*

### **Local Arrangement and Registration Chair**

*Catherine Plottier - France*

### **Organizing Chair**

*Jean-Alain Hernandez - France*

*René Joly - France*

## VIII Organization

### Program Committee Members

*Augusto Albuquerque - Brazil*  
*Harmen van As - Austria*  
*Augusto Casaca - Portugal*  
*Paolo Castelli - Italy*  
*Imrich Chlamtac - USA*  
*Jean-Pierre Coudreuse - France*  
*Nelson L. S. Fonseca - Brazil*  
*Luigi Fratta - Italy*  
*Giorgio Gallassi - Italy*  
*Andre Girard - Canada*  
*Villy B. Iversen - Denmark*  
*Bijan Jabbari - USA*  
*Konosuke Kawashima - Japan*  
*Peter Key - UK*  
*Daniel Kofman - France*  
*Paul Kuehn - Germany*  
*Helmut Leopold - Austria*  
*John Luetchford - Canada*  
*Lorne Mason - Canada*  
*Serafim Nunes - Portugal*  
*Guido Petit - Belgium*  
*Sathya Rao - Switzerland*  
*Joao Rodrigues - Portugal*  
*Catherine Rosenberg - UK*  
*Tadao Saito - Japan*  
*Amardeo Sarnea - Germany*  
*Marion Schreinemachers - Netherl.*  
*Jan Slavik - Czech Republic*  
*Samir Tohme - France*  
*Danny Tsang - Hong Kong*  
*Finn Arve Aagesen - Norway*  
*Andres Albanese - USA*  
*Chase Bailey - USA*  
*Ermanno Berruto - Italy*  
*Andrew Campbell - USA*  
*Jon Crowcroft - UK*  
*Andre Danthine -Belgium*  
*Walid Dabbous - France*  
*Michel Diaz - France*  
*Sarolta Dibuz - Hungary*  
*Christophe Diot - USA*

*Otto Duarte - Brazil*  
*Wolfgang Effelsberg - Germany*  
*Nicolas D. Georganas - Canada*  
*Enrico Gregori - Italy*  
*Roch Guerin - USA*  
*Christian Huitema - USA*  
*Marjory Johnson - USA*  
*Farouk Kamoun - Tunisia*  
*Koos Koen - RSA*  
*Jacques Labetoulle - France*  
*Jean-Yves Le Boudec - Switzerl.*  
*Guy Leduc - Belgium*  
*Olli Martikainen - Finland*  
*Steve Pink - Sweden*  
*Nina Taft Plotkin - USA*  
*Radu Popescu-Zeletin - Germany*  
*Luigi Rizzo - Italy*  
*Aruna Seneviratne- Australia*  
*Otto Spaniol - Germany*  
*Ralf Steinmetz -Germany*  
*David Hutchison - UK*  
*Chris Blondia - Belgium*  
*Miklos Boda - Hungary*  
*Herwig Bruneel - Belgium*  
*Olga Casals - Spain*  
*Prosper Chemouil - France*  
*Giovanni Colombo - Italy*  
*Tony Ephremides - USA*  
*Andras Farago - USA*  
*Erol Gelenbe - USA*  
*Mario Gerla - USA*  
*Fabrice Guillemin - France*  
*Gerard Hebuterne - France*  
*Demetres Kouvatso - UK*  
*Karl Lindberger - Sweden*  
*Jon Mark - Canada*  
*Marco Marsan - Italy*  
*Lazaros Merakos - Greece*  
*Jouni Mikkonen - Finland*  
*Debasis Mitra - USA*  
*Naotama Morita - Japan*

Organization IX

*Arne Nilsson - USA*  
*Raif Onvural - USA*  
*Ramon Puigjaner - Spain*  
*James Roberts - France*  
*Yutaka Takahashi - Japan*

*Ahmed Tantawy - USA*  
*Phouk Tran-Gia - Germany*  
*Jorma Virtamo - Finland*  
*Adam Wolisz - Germany*  
*Lyman Chapin -USA*

## List of Reviewers

<i>Kostas Tsibanis</i>	<i>Koos Koen</i>	<i>Gerard Hebuterne</i>
<i>Harmen van As</i>	<i>Jacques Labetoulle</i>	<i>Raif Onvural</i>
<i>Augusto Albuquerque</i>	<i>Jean-Yves Le Boudec</i>	<i>Ahmed Tantawy</i>
<i>Lazaros Merakos</i>	<i>Guy Leduc</i>	<i>Karl Lindberger</i>
<i>Augusto Casaca</i>	<i>Olli Martikainen</i>	<i>Marco Marsan</i>
<i>Imrich Chlamtac</i>	<i>Steve Pink</i>	<i>David Hutchison</i>
<i>Nelson L.S.Fonseca</i>	<i>Nina Taft Plotkin</i>	<i>Ralf Steinmetz</i>
<i>Luigi Fratta</i>	<i>Radu Popescu-Zeletin</i>	<i>Giovanni Colombo</i>
<i>Giorgio Gallassi</i>	<i>Luigi Rizzo</i>	<i>Serge Fdida</i>
<i>Andre Girard</i>	<i>Aruna Seneviratne</i>	<i>Debasis Mitra</i>
<i>Villy B.Iversen</i>	<i>Otto Spaniol</i>	<i>Ulf Koerner</i>
<i>Bijan Jabbari</i>	<i>Chris Blondia</i>	<i>James Roberts</i>
<i>Konosuke Kawashima</i>	<i>Miklos Boda</i>	<i>Lyman Chapin</i>
<i>Peter Key</i>	<i>Herwig Bruneel</i>	<i>Philippe Owezarski</i>
<i>Daniel Kofman</i>	<i>Olga Casals</i>	<i>Bart Steyaert</i>
<i>Paul Kuehn</i>	<i>Tony Ephremides</i>	<i>Stefano Giordano</i>
<i>Helmut Leopold</i>	<i>Andreas Farago</i>	<i>Samuli Aalto</i>
<i>Lorne Mason</i>	<i>Erol Gelenbe</i>	<i>Norbert Vicari</i>
<i>Serafim Nunes</i>	<i>Mario Gerla</i>	<i>Patricia Wilcox</i>
<i>Tadao Saito</i>	<i>Demetres Kouvatso</i>	<i>Michael Menth</i>
<i>Danny Tsang</i>	<i>Jon Mark</i>	<i>Stefan Koehler</i>
<i>Finn Arve Aagesen</i>	<i>Ioannis Stavrakakis</i>	<i>Henning Sanneck</i>
<i>Andres Albanese</i>	<i>Jouni Mikkonen</i>	<i>Nedo Celandroni</i>
<i>Chase Bailey</i>	<i>Arne Nilsson</i>	<i>Francesco Potorti</i>
<i>Ermanno Berruto</i>	<i>Ramon Puigjaner</i>	<i>Vittorio Ghini</i>
<i>Andrew Campbell</i>	<i>Yutaka Takahashi</i>	<i>Raffaele Perego</i>
<i>Jon Crowcroft</i>	<i>Phouk Tran-Gia</i>	<i>Kurt Tutschku</i>
<i>Andre Danthine</i>	<i>Jorma Virtamo</i>	<i>Shoji Kasahara</i>
<i>Walid Dabbous</i>	<i>Adam Wolisz</i>	<i>Oliver Rose</i>
<i>Michel Diaz</i>	<i>Jean-Pierre</i>	<i>Mathias Duemmler</i>
<i>Sarolta Dibuz</i>	<i>Coudreuse</i>	<i>Kenji Leibnitz</i>
<i>Christophe Diot</i>	<i>John Luetchford</i>	<i>Lars Wolf</i>
<i>Otto Duarte</i>	<i>Guido Petit</i>	<i>Luigi Verri</i>
<i>Wolfgang Effelsberg</i>	<i>Sathya Rao</i>	<i>Marco Di Concetto</i>
<i>Nicolas D. Georganas</i>	<i>Joao Rodrigues</i>	<i>Nikolaos Mitrou</i>
<i>Enrico Gregori</i>	<i>Catherine Rosenberg</i>	<i>Fabrizio Zizza</i>
<i>Roch Guerin</i>	<i>Jan Slavik</i>	<i>Roberto Paglino</i>
<i>Christian Huitema</i>	<i>Samir Tohme</i>	<i>Giorgio Gallassi</i>
<i>Marjory Johnson</i>	<i>Prosper Chemouil</i>	<i>Andrea Bianco</i>
<i>Farouk Kamoun</i>	<i>Fabrice Guillemin</i>	<i>Emilio Leonardi</i>

<i>Meo Michela</i>	<i>Hiroyuki Kawano</i>	<i>Dorte Moeller</i>
<i>Claudio Casetti</i>	<i>Shigefusa Suzuki</i>	<i>Jana Tuckova</i>
<i>Renato Lo Cigno</i>	<i>Noriaki Kamiyama</i>	<i>Qiang Ren</i>
<i>Marco Mellia</i>	<i>Naoki Naoki</i>	<i>Arunabha Sen</i>
<i>Fabio Neri</i>	<i>Wakamiya</i>	<i>Jose M. Barcelo</i>
<i>Gian Paolo Rossi</i>	<i>Miki Yamamoto</i>	<i>Dominique Delisle</i>
<i>Iakovos Venieris</i>	<i>Marcelo Rubinstein</i>	<i>Gyorgy Miklos</i>
<i>Luigi Musumeci</i>	<i>Paulo Goncalves</i>	<i>Lloren Cerd</i>
<i>Franco Davoli</i>	<i>Paulo Vidal</i>	<i>Leos Bohac</i>
<i>Andrea Baiocchi</i>	<i>Artur Ziviani</i>	<i>Victor Yau</i>
<i>Sergio Palazzo</i>	<i>Bo Friis Nielsen</i>	<i>Jianping Pan</i>
<i>Sebastien Ardon</i>	<i>Lee Johnston</i>	<i>Yu Zeng</i>
<i>Christos Douligeris</i>	<i>John Cushnie</i>	<i>Brahim Bensaou</i>
<i>Leandros Tassiulas</i>	<i>Steven Simpson</i>	<i>Dongmei Zhao</i>
<i>Dimitrios Serpanos</i>	<i>Laurent Mathy</i>	<i>Jianping Pan</i>
<i>Michael Paterakis</i>	<i>Mark Banfield</i>	<i>Olivier Bonaventure</i>
<i>Jeff Capone</i>	<i>Ryutaro Kawamura</i>	<i>Jean-Marc Uze</i>
<i>Elias Manolakos</i>	<i>Piet Demeester</i>	<i>Geoffroy Jennes</i>
<i>Sophia Tsakiridou</i>	<i>Bo Friis Nielsen</i>	<i>Ravi Mazumdar</i>
<i>Bjorn Landfeldt</i>	<i>Sebastia Galmes</i>	<i>Ness Shroff</i>
<i>Jonathan Chan</i>	<i>Harry G. Perros</i>	<i>Laurent Massoulie</i>
<i>Enzo Mingozzi</i>	<i>Henrik Christiansen</i>	<i>Edwin Chong</i>
<i>Dirk Staehle</i>	<i>Salvador Balle</i>	<i>Andre Girard</i>
<i>Celia Ramos</i>	<i>Guillem Femenias</i>	<i>Hossam Abdelbaki</i>
<i>J. Monteiro</i>	<i>Nikolas Mitrou</i>	<i>William Lau</i>
<i>Boris Tsybakov</i>	<i>David McDonald</i>	<i>Anton Kuchar</i>
<i>Dimitrios Makrakis</i>	<i>Hajer Tounsi</i>	<i>Koenraad Laevens</i>
<i>Michael Devetsikiotis</i>	<i>Ilhem Lengliz</i>	<i>Norvald Stol</i>
<i>Klara Nahrstedt</i>	<i>Antonio Loureiro</i>	<i>Olav Osterbo</i>
<i>Denis Collange</i>	<i>Abdelfattah Belghith</i>	<i>Pavel Hofman</i>
<i>Philippe Olivier</i>	<i>Thomas Fuhrmann</i>	<i>Laurent Dairaine</i>
<i>Marinho Barcellos</i>	<i>Farouk Kamoun</i>	<i>Saul Pomares</i>
<i>Edmundo Madeira</i>	<i>Jogesh Muppala</i>	<i>Frantisek Krizovsky</i>
<i>Rene Boel</i>	<i>Manivasakan</i>	<i>Antonio Grilo</i>
<i>Udo Krieger</i>	<i>Rathinam</i>	<i>Ragnar Andreassen</i>
<i>Illka Norros</i>	<i>Jean-Jacques Pansiot</i>	<i>Khaled Elsayed</i>
<i>Villy Baek Iversen</i>	<i>Thomas Ziegler</i>	<i>Aarstad Egil</i>
<i>Emilio Leonardi</i>	<i>Guy Pujolle</i>	<i>Rui Lopes</i>
<i>Jose R. Gallardo</i>	<i>Kave Salamatian</i>	<i>Teresa Vazao</i>
<i>Ioannis Nikolaidis</i>	<i>Khaldoun Al Agha</i>	<i>Bjarne E. Helvik</i>
<i>Naoaki Yamanaka</i>	<i>Ayalvadi Ganesh</i>	<i>Kimon Kontovasilis</i>
<i>Guido H. Petit</i>	<i>Sambit Sahu</i>	<i>Peder Emstad</i>
<i>Masaki Aida</i>	<i>Supratik</i>	<i>Evangelos Zerva</i>
<i>Ioannis Lambadaris</i>	<i>Bhattacharyya</i>	
<i>Kaoru Sezaki</i>	<i>Koenraad Laevens</i>	
<i>Naoto Miyoshi</i>	<i>Lars Staalhagen</i>	
<i>Arata Koike</i>	<i>Allan T. Andersen</i>	



