

Preface

In recent years the Internet has seen a tremendous growth in terms of amount of traffic and number of users. At present, the primary technical objective is to provide advanced IP networking services to support an evolving set of new applications like, for example, IP-telephony, video teleconferencing, Web TV, multimedia retrieval, remote access to and control of laboratory equipment and instruments. To achieve this objective, the Internet must move from a best-effort paradigm without service differentiation to one where specific Quality of Service (QoS) requirements can be met for different service classes in terms of bandwidth, delay, and delay jitter. Another crucial goal is the ubiquitous deployment of advanced services over the global network resulting from the effective integration of wireless and satellite segments into the future Internet.

Although many researchers and engineers around the world have been working on these challenging issues, several problems remain open.

The *Tyrrhenian International Workshop on Digital Communications 2001*, which focused on the *Evolutionary Trends of the Internet*, was conceived as a highly selective forum aimed at covering diverse aspects of the next generation of IP networks.

The members of the Technical Program Committee of the workshop concentrated their efforts on identifying a set of topics that, although far from being exhaustive, provide a sufficiently wide coverage of the current research challenges in the field.

Eight major areas were envisioned, namely *WDM Technologies for the Next Generation Internet*, *Mobile and Wireless Internet Access*, *QoS in the Next Generation Internet*, *Multicast and Routing in IP Networks*, *Multimedia Services over the Internet*, *Performance Modeling and Measurement of Internet Protocols*, *Dynamic Service Management*, *Source Encoding and Internet Applications*.

With the invaluable help of the session organizers, 46 papers, partly invited and partly selected on an open-call basis, were collected for presentation at the workshop and publication in this book. We believe that the contributions contained in these proceedings represent a timely and high-quality outlook on the state of the art of research in the field of multiservice IP networks, and we hope they may be of use for further investigation in this challenging area.

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Acknowledgements

The editor is much indebted and wish to express his sincere thanks to all the components of the Technical Program Committee of the 2001 edition of the International Thyrrenian Workshop on Digital Communications, and especially to the Organizers of the Technical Sessions, namely *Anthony Acampora* from the University of California at San Diego, USA, *Imrich Chlamtac* from the University of Texas at Dallas, USA, *Mario Gerla* from the University of California Los Angeles (UCLA), USA, *Magda El Zarki* from the University of California at Irvine, USA, *Jim Kurose* from the University of Massachusetts at Amherst, USA, and *Jorg Liebeherr* from the University of Virginia, USA, whose precious cooperation was essential to the organization of the Workshop.

The editor also expresses his sincere appreciation to all the authors for contributing to the Workshop with their high quality papers.

The preparation of this volume has benefited from the hard work of many people. The editor would like to acknowledge the LNCS staff at Springer, *Alfred Hofmann* in particular, for making so many efforts to release the volume on schedule. Finally, a special thank goes to the Publication Chair, *Giovanni Schembra* from the University of Catania, whose help in collecting, processing and editing all the manuscripts was invaluable.



The Workshop has been technically co-sponsored by the
IEEE Communication Society



The Workshop would not have come into being without the support of the Italian National Consortium for Telecommunications (CNIT), without the patronage of the University of Catania and of the Municipality of Taormina, and without the sponsorship of the following companies, which are gratefully acknowledged.

The Accenture logo, featuring a stylized 'A' with a greater-than sign above it, followed by the word 'accenture' in lowercase.

The Edisontel logo, featuring a stylized 'E' with a lightning bolt inside, followed by the word 'EDISONTEL' in uppercase.

The Fastweb logo, featuring the word 'FASTWEB' in a bold, sans-serif font, with a stylized 'F' and 'W'.

The Gruppo e.Biscom logo, featuring the word 'Gruppo' in a small font, followed by a red square and the word 'e.Biscom' in a bold, sans-serif font.

The Omnitel and Vodafone logos. Omnitel is in a green box with 'omnitel' in white. Vodafone is below it, with a red circle and the word 'vodafone' in red.

The Alcatel logo, featuring a stylized 'A' with a triangle above it, followed by the word 'ALCATEL' in a bold, sans-serif font. Below it, the text 'ARCHITECTS OF AN INTERNET WORLD' and 'ETNØTEAM THE FREEDOM PARTNERS' are visible.

The Marconi logo, featuring the word 'Marconi' in a stylized, cursive font, with a blue background.

The Telecom Lab logo, featuring a stylized 'T' with a red and white striped background, followed by the words 'TELECOM LAB' and 'ITALIA' below it.

Evolutionary Trends of the Internet

2001 Thyrrhenian International Workshop on Digital

Communications, IWDC 2001, Taormina, Italy,

September 17-20, 2001. Proceedings

Palazzo, S. (Ed.)

2001, XII, 724 p., Softcover

ISBN: 978-3-540-42592-2