The regular and intense development of IT technology has had an impact on the rapid growth of the computer networks domain. Computer networks are the part of computer science whose development affects not only the other existing branches of technical science but also contributes in developing completely new areas.

Computer networks as well as the entire field of computer science are the subject of constant changes caused by the general development of technologies and a need of innovativeness in their applications. It produces a very creative and interdisciplinary interaction between computer science technologies and other technical activities, and directly leads to perfect solutions. New methods, together with tools for designing and modelling computer networks, are regularly extended. Above all, the essential issue is that the scope of computer network applications is increased thanks to the results of new research and new application proposals appearing regularly. Such solutions were not even taken into consideration in the past decades. While recent applications stimulate the progress of scientific research, the vast use of new solutions raise numerous problems, both practical and theoretical.

This book collates the research work made by scientists from numerous notable research centers. The included chapters refer to a wide spectrum of important issues regarding the computer networks and communication domain. It is a collection of papers presented at the 22nd edition of the International Science Conference: Computer Networks. The conference was held in Brunów Palace, located in Brunów, a small village near Lwówek Śląski, (Poland) during June 16–19, 2015. The conference, organized continuously since 1994 by the Institute of Informatics of Silesian University of Technology together with the Institute of Theoretical and Applied Informatics in Gliwice, is the oldest event of this kind in Poland. The current edition was the 22nd event in a row. The international status of the conference was attained seven years ago, thus in 2015 it was the eighth international edition. Just like its predecessors, the conference took place under the auspices of the Poland section of IEEE (technical
co-sponsor). What is more, the conference partner is also iNEER (International Network for Engineering Education and Research).

The presented papers were accepted after careful reviews made by three independent reviewers in a double-blind way. The acceptance level was below 55%. The chapters are organized thematically into several areas within the following tracks:

– Computer Networks
– Teleinformatics and Communications
– New Technologies
– Queueing Theory
– Innovative Applications

Each group includes very stimulating studies that may interest a wide readership.

In conclusion, on behalf of the Program Committee, we would like to express our acknowledgments to all authors for sharing their research results as well for their assistance in developing this monographic issue, which is in our judgment a reliable reference in the computer networks domain. We also want to thank the members of the Technical Program Committee for their participation in the reviewing process.

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