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Preface

This special issue is dedicated to the quality of service (QoS) multi-service networks, based on packet switched technologies like Internet protocol (IP) or asynchronous transfer mode (ATM). Introduction of QoS mechanisms and appropriate traffic control rules in such networks is of special interest since they allow us for effective transfer of information corresponding to a variety of applications, like voice telephony, computer data and multimedia. These applications differ in (1) type of traffic profile emitted to the network (from constant bit rate to variable bit rate), (2) volume of requested bandwidth (from kbit/s up to Mbit/s), and (3) QoS requirements (some applications are more sensitive on delay while others are more sensitive on loss rate). For this purpose, a set of network services is defined and implemented in multi-service networks, each of them designed for transferring traffic generated by adequate types of applications. A network service should have its own QoS mechanisms protecting target QoS objectives, commonly expressed in the form of guaranteed packet loss rate, maximum packet transfer delay, throughput etc. Current research activities are mainly focused on enhancement of IP-based networks toward multi-service networks.

The papers, designated for this special issue were selected from the papers presented at the annual Polish Teletraffic Seminar, which was held in Zakopane on September 1–3, 2001. Traditionally, the Seminar gathers the researchers from Universities of Technologies and Polish Academy of Science working on traffic modeling, methods for network dimensioning, network mechanisms supporting QoS, mechanisms for communication protocols, queuing models for telecommunications and computer networks etc.

Wojciech Burakowski
Guest Editor