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Preface

Annual International Conferences on *Decision Support for Telecommunications and Information Society*, organized by the National Institute of Telecommunications in Warsaw, Poland, assembled researchers working in several modern and important fields of telecommunications and computer science. Some papers submitted to these conferences are presented at this issue.

It is generally accepted that information and knowledge are becoming essential economic assets. Telecommunication is naturally integrated with other informational technologies, and diverse problems of telecommunications need formulation with multiple criteria. These three connected subjects: *knowledge*, *telecommunications* and *decision systems*, are discussed in the first paper and some others, presented here.

Routing is an important aspect of telecommunications networks because it can greatly influence overall network performance. It is also a difficult, distributed multi-objective problem, with many possible solutions. Three quite different approaches are described here: multi-objective dynamic routing model, swarm intelligence for network routing optimization and distributed asynchronous algorithms.

Routing is connected with *traffic control*. Some papers analyze optimization algorithms of traffic control and comparison between them.

The problem of telecommunications *network design*, with the objective to maximize service data flows and provide fair treatment of all services, is very up-to-date. One suggested approach is based on max-min fair solution concept and the other – on heuristic and integer programming.

Decision analysis is represented by two papers. The first one uses Decision Making Trial and Evaluation Laboratory (DEMATEL) to construct structural models of various factors that prevent safety and security of our life. The second proposes multiple criteria decision analysis of the problems with uncertainties, based on the evidential reasoning approach, and used for supplier assessment and customer satisfaction.

Knowledge representation and *data mining* are relevant to knowledge discovery – very important and promising area of science and technology. The papers in this issue discuss some aspects of structural representation and event mining based on observations.

The subjects are different but joined by one common idea – decision support.

Wiesław Traczyk
Guest Editor