

## PREFACE

This special issue of *RAIRO-Operations Research* journal is concerned about constraint programming. It gives the opportunity for a selection of the applied and research papers presented last year at the French national conference on constraint programming to disseminate their results in the Operations Research community.

Papers were selected on the basis of French conference reviewers' scores and their adequacy with Operations Research topics such as solving combinatorial optimization problems. Selected authors submitted extended versions of their papers for the purpose of this special issue and their papers were accepted after a two-phase reviewing process.

The French national conference on constraint programming, called JFPC (*Journées Francophones de Programmation par Contraintes*), takes place every year at the end of Spring, since 1994. It allows French speaking researchers to exchange about their recent work in constraint programming. In 2012, the Program Committee was chaired by Simon de Givry, and it was held in Toulouse. It received about 49 submissions from ten different countries, among which 41 were accepted for presentation, each one being reviewed by three to four experts in the field.

Constraints arise in design and configuration, planning and scheduling, diagnosis and testing, and in many other contexts. Constraint programming borrows different techniques coming from Operations Research and Artificial Intelligence. It offers expressive languages and general-purpose solvers to model and solve constraint satisfaction and optimization problems. It can solve problems in telecommunications, Internet commerce, electronics, bioinformatics, transportation, network management, supply chain management, and many other fields.

The four selected papers in this issue deal with several real-world applications. The paper about *Exploiting tree decomposition for guiding neighborhoods exploration for vns* by Mathieu Fontaine, Samir Loudni, and Patrice Boizumault explores local and tree search hybrid methods for solving difficult radio link frequency assignment and bioinformatics (tagSNP selection) problems. The paper about *Optimal allocation of renewable energy parks: a two-stage optimization model* by Carmen Gervet and Mohammad Atef compares various approaches in order to solve an energy park allocation problem with constraints. The paper about *Solving the crop allocation problem using hard and soft constraints* by Mahuna Akplogan,

Simon de Givry, Jean-Philippe Métivier, Gauthier Quesnel, Alexandre Joannon, and Frédéric Garcia presents a spatio-temporal allocation problem occurring in a farm and solves it using cost function networks. And last, the paper about *Time-dependent simple temporal networks: properties and algorithms* by Cédric Pralet and Gérard Verfaillie proposes an extension of the Simple Temporal Network framework, applied on a satellite time-dependent scheduling problem.

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*editors of this RAIRO-OR JFPC 2012 special issue*