
Editorial

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Biographical notes: A. Oulamara is an Associate Professor at the Department of Industrial Engineering, School of Mines of Nancy. He received his MSc in Computer Science from National Polytechnic Institute of Grenoble, PhD in Computer Science from Joseph Fourier University, Grenoble, in 2001, and Habilitation in Computer Science from the National Polytechnic Institute of Lorraine, Nancy, in 2009. His research interests lie mainly in production scheduling and logistics, combinatorial optimisation, methods applied to manufacturing systems. He has published papers in many operational research and industrial engineering journals.

M-C. Portmann is an Emeritus Professor at the National Polytechnic Institute of Lorraine, Nancy. Since 1975, she has been researching in operations research more and more involved in production manufacturing, logistics and supply chain applications. In 1998, she became the first President of the ROADEF, the national French Operations Research Society and she has worked strongly for the development of OR activities both research, teaching and industrial applications. Her publications cover a large spectrum in OR applied to industrial engineering. She has terminated her career as Full Professor at the Ecole des Mines de Nancy, an Engineer School of the INPL.

The origin of this volume of the *European Journal of Industrial Engineering (EJIE)* comes from the Ninth Conference of ROADEF (French Operations Research and Decision-Making Society) in Nancy, France, February 10–12, 2009. The conference was jointly organised by Nancy University and the National Institute for research in computer science and control (INRIA).

The primary orientation of this annual conference was the reporting of new research in the area of operations research, decision-making. The scope of the conference was to serve as a place for academics and industrial participants to discuss their most recent research findings and to provide them an opportunity for exchange and collaboration.

The aim of this volume is to report the results presented in the conference on models and algorithms of management of operations in the complex and realistic problems. The volume consists of three papers that deal with specific topics in the models and algorithms for operations management.

The paper of Artigues, Bourreau, Afsar, Briant and Boudia deals with the disruption management problem for commercial airlines. This problem has been presented by Amadeus (the leading provider of IT solutions to travel industry – <http://www.amadeus.com>) for the ROADEF 2009 Challenge, an international

competition organised by the ROADEF. This paper presents this industrial large-scale optimisation problem and underlines its difficulties compared to previously tackled problems in the area. This paper survey the methods proposed by the candidates to find efficient solutions that minimise the duration of the disruption and provide the official results and participant ranking.

The paper of Mansi, Hanafi, Wilbaut and Clautiaux proposes an oscillation strategy heuristic combined with mathematical programming for disruption management problem. The proposed method is divided into two steps: the first step tries to generate a feasible solution to the problem; and the second step improves this solution using an oscillation strategy that alternates between constructive and destructive phases. Numerical results show the effectiveness of this method, which produced the best results known for some of the most demanding instances of a real-life problem. With these results, this paper is ranked the 2nd in the international ROADEF 2009 Challenge.

The paper of Grangeon and Norre considers the complex parallel assembly line balancing problem (PALBP), which consists of many parallel assembly lines. On each line, a product of a given type is manufactured according to the same cycle time. The objective is to minimise the total number of required operators such that an operator can work on two adjacent lines. Thus, by arranging the lines in a better way, it is possible to increase efficiency of the production system by combining stations of neighbouring lines when balancing the lines. Authors propose a metaheuristic approach and numerical results show the efficiency of that approach.

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