

The Crew Rostering Problem at Urban Mass Transit Companies

The Assignment of Crews without Predefined Work

José Vasconcelos Ferreira and Ana Luísa Ramos

GOVCOPP/Department of Economics, Management and Industrial Engineering
University of Aveiro, Campus de Santiago
Aveiro, Portugal

josev@ua.pt, aramos@ua.pt

Abstract— Concerning the crew rostering problem at urban mass transit companies, the daily assignment of the existing crews to the transportation duties frequently originates a complex and ill-defined problem, involving objectives and constraints that vary from company to company. Considering that crew members represent the majority of personnel employed by these companies, the amount of work involved and the resulting impacts can be easily imagined. This work specially addresses the assignment of crews whose work is not defined on a regular basis. First, the overall rostering process is described and the subsequent problems are identified. Then, the decision support system developed by the authors is presented, being devoted particular attention to an innovative tool designed for the automatic assignment of the crews without predefined work. Finally, the results obtained by the two largest urban mass transit companies operating in Portugal using that tool are reported.

Keywords— *crew rostering; automatic assignment; mass transit companies*

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BIOGRAPHY

José Vasconcelos Ferreira was born in Portugal in 1960. He received the M.Sc. degree in operational research and systems engineering from the Technical University of Lisboa, Lisboa, Portugal, in 1989, and the Ph.D. degree in engineering sciences from the University of Porto, Porto, Portugal, in 2005. He is an Associate Professor of Industrial Engineering and Management (IEM) with the University of Aveiro, since 2005, and integrated member of the Research Unit on Governance, Competitiveness and Public Policies (GOVCOPP) of the University of Aveiro. He is Director of the IEM doctoral program, and Member of the Council of the Department of Economics, Management and Industrial Engineering. He has more than twenty years of experience collaborating with the main urban mass transit companies in Portugal. His research work focuses on systems engineering, logistics, multivariate data analysis, and operational planning at mass transit companies.

Ana Luísa Ramos was born in Portugal in 1974. She received the M.Sc. degree in computers engineering from the University of Coimbra, Coimbra, Portugal, in 2002 and the Ph.D. degree in industrial management from the University of Aveiro, Aveiro, Portugal, in 2011. She is an Assistant Professor of Industrial Engineering and Management with the University of Aveiro where she teaches since 1997 (Simulation, Operations Management and Logistics). She is member of the Department of Economics, Management and Industrial Engineering Executive Board and Council. She is an integrated member of the Research Unit on Governance, Competitiveness and Public Policies (GOVCOPP) of the University of Aveiro being the research work focused on systems engineering and modeling & simulation of complex systems, with applications in the industrial sector and in the transportation sector. She has participated in scientific research projects and industry-based projects. She co-authored book chapters and several scientific papers published in peer reviewed international journals and international conferences proceedings.