

OR at Netherlands Railways: Successes and Challenges

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Abstract

In 2008, Netherlands Railways (NS) won the Franz Edelman Award for the Operations Research (OR) methods it used to introduce a completely, new timetable in December 2006. This timetable was selected from a set of 10 timetables, all generated with OR models. In addition, rolling stock and crew schedules were constructed with OR tools. The last couple of years, NS has further developed its OR models for rolling stock and crew scheduling resulting in additional savings.

Although the general performance of NS has significantly improved since the introduction of the new timetable, the performance is still too low during major disruptions. A good example is the period with large amounts of snow in December 2009. Therefore, we develop new OR models and algorithms to re-schedule the timetable, rolling stock and crew during and after major disruptions.