Scheduling of outbound luggage handling at airports

This article considers the outbound luggage handling problem at airports. The problem is to assign handling facilities to outbound flights and decide about the handling start time. This dynamic, near real-time assignment problem is part of the daily airport operations. Quality, efficiency and robustness issues are combined in a multi-criteria objective function. We present important requirements for the real world usage of the model and compare different solution techniques. One solution method is a heuristic approach oriented on the logic of GRASP (Greedy randomized adaptive search procedure). Another solution method is a decomposition approach. The problem is divided into different subproblems and solved in iterative steps. The different solution approaches are tested on real world data from Frankfurt Airport.