Abstract:

We describe the operational planning system POP developed for Danzas Euronet, a merger of Deutsche Post Transport and Danzas NTO. As of November 1997, the system has been daily used for the transport planning of on average 4000 container-orders a day on train and vehicles in Germany. Important features include the involvement of many practical constraints as well as the requirement to balance the availability of containers throughout the country during the week. This repositioning aspect needs to be taken into account integratedly with the planning of client orders to have a cost-optimal solution. Besides daily use, the system has proven itself in many simulation studies supporting operations as well as commerce.

In this talk we will highlight the complexity of the problem from a practical, from a mathematical as well as from a technical point of view. Special attention will be given to the models and algorithms that we use. Since the dimension of the problem is large (certainly when compared to the allowed computation time of less than 15 minutes) the implementation choices and data structures are important as well.