



Research School for Operations  
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**Optimizing load planning and container routing in intermodal rail transport**

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Intermodal transportation is strongly supported by policy makers in Europe, as a larger market share for intermodal transportation implies a shift towards more environmental friendly transport modes and less congestion on the road. In order to stimulate intermodal transport, additional costs should be reduced, while fast planning algorithms with real-life problem characteristics should be available to accommodate decisions in a complex environment. The aim of this thesis is to offer intermodal planning support in order to minimize total transport costs and maximize service capacity utilization. Two planning problems are studied from the viewpoint of a network operator: intermodal routing and train load planning.

First, intermodal routing is concerned with routing transport orders throughout an intermodal service network. Usually, decisions on assigning transport orders to intermodal long-haul services and local drayage routing to transport load units between load and unload locations and the terminals for long-haul transport are made sequentially. This PhD aims at integrating both decisions and quantifying its advantages. Second, train load planning is concerned with assigning outbound load units to locations on intermodal trains. This PhD focuses on providing a number of load plans using a multi-objective approach, while accounting for real-life loading restrictions.