



Research School for Operations  
Management and Logistics

**Location strategy for the maintenance of rolling stock**

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In this project, we study how many maintenance locations one should have in a railway network and where the locations should be positioned. Furthermore, we study what level of specialization is desired per location, and what the capacity of the location should be such that one obtains a high availability of the rolling stock (trains) against low overall cost.

The specialization of a facility is the amount of different tasks it is allowed to perform. Currently the specialization of a facility includes either inspection of basic functions and cleaning tasks or extensive inspections combined with the actual maintenance of rolling stock. We will use the characteristics of these types of facilities and generalize it in such a way that all possible specializations can be considered.

We start by investigating the interaction between public transport and facility location decisions. This is necessary to guarantee feasibility and high availability of the rolling stock.

Secondly we investigate how to determine the capacity of a location, when the specialization and the amount and type of the train units assigned to it are known. We continue by including both decisions into a discrete capacitated facility location model, which achieves high availability against low overall cost.