

**Research theme** Maintenance Engineering  
**Research title** Initial spare parts assortment decision making: a structured approach  
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**Research period** From 02/2013 to 12/2013  
**Company** NedTrain  
**Supervisor** Dr. A.J.J. Braaksma

## Background

To replace failed parts of rolling stock, spare parts are required. Before the start of the use phase of new rolling stock series, the maintenance organization has to decide on the initial spare parts assortment. My assignment focused on the initial spare parts assortment decision-making process, associated problems and more specific the data needed to support this process. The assignment was executed at NedTrain, the maintenance organization responsible for the maintenance, modernization, reparation and cleaning of rolling stock for the Netherlands Railways.

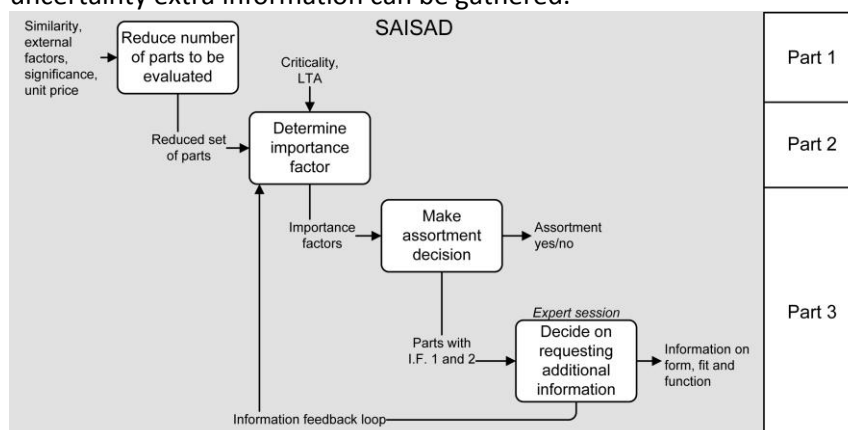
## Assignment

The main research question is as follows: How can the current initial spare parts assortment decision-making process be improved by a Decision Support Model that timely defines the data needs, and helps to make better informed decisions?

To answer this main research question, information from literature and the case company was used. By doing interviews the current assortment determination process was studied.

## Results

A Decision Support Model is created to provide prescriptive guidelines for the process. The real data needs for the initial spare parts assortment decision-making process were determined. From this information the Decision Support Model was created, called the SAISAD model: *Structured Approach for Initial Spare parts Assortment Decision-making*. In the tool, two evaluation moments are proposed. At these two moments a decision on the assortment is proposed, and in the case of uncertainty extra information can be gathered.



## Personal experience

In general, a graduation assignment at a company is a good opportunity to gain experience 'in the field'. At NedTrain, I had the opportunities to interview a lot of people in the organization and to visit several departments of the company. Because of the openness during interviews and the willingness to help me with my research, my time at the company has been a pleasant experience. Next to this positive experience at NedTrain, my supervisors from the Maintenance Engineering chair were really helpful and always available to help me with my research.