Introduction

Mitsubishi Caterpillar Forklift Europe (MCFE) in Almere produces a wide range of forklift trucks for the European, African and Middle East markets. Since the foundation of MCFE in 1992, the production system is constantly optimized to improve operations. MCFE is convinced that the average cycle time and work in process can be reduced.

Objective

To develop and to introduce methods in order to improve the system’s performance.

Approach

The design process in this research has been based on the decision cycle of Roozenburg and Eekels [1].

Model

The influence of the different parameters on the system’s behavior is studied by carrying out a simulation study. For this purpose a model of MCFE’s production system (see Figure 3) has been developed and described in formalism $\chi$.

Results

The system’s performance is evaluated by using throughput $\delta$, cycle time $\phi$ and work in process $w$. Part availability is expected to be a crucial parameter. The influence of part availability on the system’s performance is depicted in Figure 4.

Conclusions

- Modeling and simulation are useful tools for analyzing the system’s performance.
- Increasing part availability reduces the average cycle time and work in process significantly.

References