

Extraction of Functional Requirements for Manufacturing from Product Documentation

Keywords: factory planning, functional requirements, manufacturing processes, information extraction

Abstract

In the context of designing the factory of the future, it is important to efficiently capture and manage the requirements as early as possible in the design process. Besides the strategy of a company one source for deriving functional requirements is the product to be produced itself. In this work it shall be examined how functional requirements may be derived from a CAD drawing, assembly drawing or a Bill of Material.

Background Information

Today, manufacturing enterprises have to meet the increasing global consumer demands for greener, more customized and higher quality products. This causes the development of the corresponding production processes and facilities to be more complex and challenging.

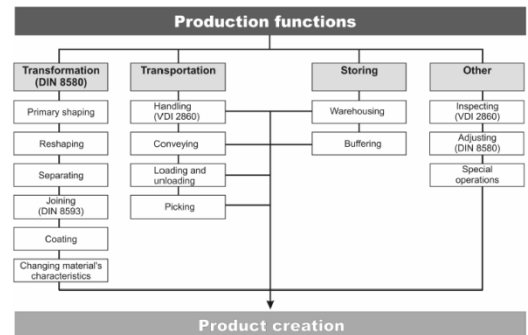
Thus, one of the first steps in planning a new factory is to collect and efficiently manage the requirements for the new planned facility. A very important source of information is of course the product to be produced.

Corresponding documentation like CAD drawings, assembly drawings or simply the Bill of Material have to be analyzed and translated into functional requirements for the future factory.

Therefore, this student work focuses on a profound examination of what can be extracted from the product documentation and aims at a guideline on how to translate this information into “production functions” which in turn constitute functional requirements towards the new planned factory.



extraction/
translation



Workpackages

- get familiar with related literature
- examine available product documentation of its information content regarding the production process
- develop a guideline that helps to translate the contained information in “production functions” / “assembly functions” and mark what can be extracted automatically and where additional input is needed
- demonstrate your results with a small example
- master thesis: identify the points where user knowledge has to be integrated and specify how
- documentation, mid-term and final presentation

Informationen & Administration

Daniel Politze, CLA F21.2 - politze@iwf.mavt.ethz.ch

Andreas Kunz, CLA G9 - kunz@iwf.mavt.ethz.ch