

# **Abstract**

## **Automated processing of technical documentation – Production, Recognition and digital processing of paper and digital documents with computer software**

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This master thesis describes the design, development and implementation of an automated working process, which digitally registers and archives documents. The working process is implemented in the existing database system (DBS) Kreon, which belongs to Airbus Defence and Space.

The main task of this master thesis project is to improve the efficiency of document management in the Kreon database system. The document management is improved by automating the already existing manual document processing work flows. For this a software is developed and implemented, which is independently extracting information from documents, by using image processing tools and database functions. The extracted information is then automatically compared to records of the Kreon database.

At first the existing work flow and life cycle of the documents as well as the structure of the Kreon database was analysed to design the new process. The tasks of this new process are referencing, archiving and registering of documents in a database. A system was developed, in which documents are identified with key numbers, which are also registered in a database. These key numbers enable the document to be related to other entries in the database. On the documents these key numbers are printed in form of bar codes which can be read by software with OCR capabilities. The software, which was programmed for this master thesis project, digitally processes documents by using the “Hough transformation” for straightening tilted documents and statistical calculations for retrieving the encoded key number from the bar code.

The software was tested and the results are described in this work. It is compared to commercial software and possible improvement possibilities are analysed. Finally the results of this master thesis project are summarized.

**Keywords:** Automation, Optical Character Recognition, bar codes, document management