DEPARTMENT OF AUTOMOTIVE AND AERONAUTICAL ENGINEERING

Cabin Refurbishing Supported by Knowledge Based Engineering Software

Project work towards a thesis at Universitatea Politehnica din Bucuresti (PUB)

Background

Cabin related activities, especially refurbishing, are of interest in the present economical context. Airlines need to convert their fleet once the requirements change. A great number of configuration parameters need to be handled. Some parameters are derived from certification requirements (e.g. the position of cabin items). An optimum value for all cabin parameters should be found. Knowledge Based Engineering (KBE) is one of the strategies that can be used. This thesis is part of CARISMA (Aircraft Cabin and Cabin System Refurbishing – Optimization of Technical Processes), a research project at HAW Hamburg in cooperation with industry.

Task

This thesis investigates in which way Knowledge Based Engineering can support Cabin Refurbishing. The task is broken down into these subtasks:

- Summarize Tasks in Cabin Refurbishing.
- Review the scientific field of Artificial Intelligent (AI), Knowledge Based Engineering (KBE) and Configuration Systems.
- Propose tasks in Cabin Refurbishing that would benefit from a solution with Knowledge Based Engineering.
- Present the program PaceLab Cabin.
- Describe one task in Cabin Refurbishing solved with PaceLab Cabin.
- Present the Rules Engine in PaceLab Cabin.
- Derive cabin-related design rules from CS 25.
- Demonstrate the application of existing rules and the definition of new rules for cabin-related design activities.
- List pros and cons of PaceLab Cabin and it's rules engine.

The report has to be written in English based on German or international standards on report writing.