



Interactive Cabin and Fuselage Layout with PreSTo

Task for a *Bachelor Thesis* in accordance with the examination regulations

Background

PreSTo stands for Preliminary Sizing Tool. It is a tool still under development with the goal to eventually provide full computer support to the lecture of Aircraft Design given at Hamburg University of Applied Sciences. PreSTo modules will eventually support aircraft design activities from preliminary sizing up to the calculation of Direct Operating Costs.

PreSTo-Cabin was jointly developed by Bishop GmbH and AERO – Aircraft Design and Systems Group, Hamburg University of Applied Sciences. PreSTo-Cabin provides the preliminary sizing and the interactive step-by-step design of an aircraft cabin. Based on the cabin parameters, the fuselage general dimensions are found.

Task

Currently there are already a couple of PreSTo – Cabin Excel files through previous works of other students. These files are modelled to represent the cabin layout of an A320, A330 and Fairchild Dornier 728 aircrafts. There is a need to further develop this application to model other airplanes, for eg. A McDonnell Douglas MD-11 or A380, which are the two models to be made in this thesis. A comprehensive step-by-step procedure is also explained so that somebody without previous knowledge of PreSTo – Cabin could in the future model other aircrafts using this application.

These topics should also be addressed on this thesis:

- Research and presentation of the benefits and drawbacks of having an 18 inch wide seats in comparison with 17 inch wide seats using PreSTo – Cabin as a simulation tool.
- Further improvements and other usages of the PreSTo tool other than cabin layout.

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