DEPARTMENT OF AUTOMOTIVE AND AERONAUTICAL ENGINEERING

Background

At the University of Applied Sciences Hamburg (HAW Hamburg) several tools are available for aircraft design. The tool PreSTo (Preliminary Sizing Tool) was developed within the Aero Research Group at HAW Hamburg, based on sizing calculations presented in the lecture "Aircraft Design" by Prof. D. Scholz. This tool is now called SAS Classic. Another tool that was designed is OPerA, which is far more complicated and detailed, which means it is not really student friendly. Both of these tools are developed for Part 25 requirements. All this led to the idea of developing a tool, which is in the middle of these tools and for other certification bases.

Task

The task of this thesis consists of developing the SAS Optimization tools for Part 25, Part 23 and (if possible) EASA CS-VLA by completing following subtasks as a guidance:

Perform a study on the certification requirements for Part 25, Part 23 and CS-VLA aircraft.

Get from OPerA to SAS Optimization for FAR Part 25 Jet aircraft.

Get from SAS Optimization Part 25 Prop to SAS Optimization Part 23 Prop and if possible to SAS Optimization for EASA CS-VLA Prop.

This thesis will be written in English according to German or international standards on report writing.