



European Aeronautics Science Network

OPTAS

Structural **O**ptimization **T**hin-walled **A**ircraft **S**tructures

Abstract

Optimization is generally very important part of aircraft design process involving geometric dimensions of aircraft, aerodynamic optimization and independent part of structural optimization.

Project is focused on structural optimization of thin-walled aircraft structures with main function of weight and with respecting of technological and material constrains (and with high level of efficiency). The main goal of the project is to develop and verify optimization methods, derivation of goal function and function of constrain limitation. Furthermore, software application for optimization of selected structural components should ensure practical output.

Additional goal of the project is to create a database of structural elements with optimal dimensions and suitable parameters to fulfil stability, strength and fatigue requirements with consideration of technological and costs limitations. Application of optimization methods leads to optimal design especially in the design of stiffened panels, but it may also be used for other aircraft structural elements. Project will also address utilization of different materials including metals, composite and glare materials.

Experimental verification of chosen structural elements (assemblies) will be important part of the project.

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