

STATIC CERTIFICATION A350XWB-900

S19.1

INTRODUCTION

ICEMM has participated in the static certification of the metallic and composite primary structure of the S19.1 for the Airbus A350XWB-900. In this project, it has been carried out all the calculations for the certification of different parts of the composite and metallic structure of the S19.1 (Front and Rear Firewall, Maintenance Door, Fittings, Joints of the Frames, Beams, Skin and Firewall). Additionally, it has been calculated Preliminary Risk Assessments (PRAs) of the main parts of the S19.1 (frames, beams and skin).

COMPLETED PROJECT

Client: Alestis Aerospace

Date: 2013-2014

- Certification of the composite and metallic Structure of the S19.1 for the Airbus A350XWB-900.



Figure 1. General view of the S19.1

COMPLETED ACTIVITIES

- Loads from FEM model (NASTRAN) in Patran.
- Front and Rear Firewall calculations (linear and non-linear buckling, damage tolerance, joints, ...)
- Maintenance Door calculations (frames and beams, skin and stringers, joints, ...)
- Maintenance Door fittings (metallic linear and non-linear strength analysis)
- Preliminary Risk Assessments (PRAs). Fire risk, Tail Strike and UARF.
- Development of applications for automatic calculations (Python and VBA).
- Documentation.

TECHNOLOGY

The entire project has been analyzed using Alestis-Airbus methodology. The software used in this project is:

- ISAMI v7.2.2.
- Excel+VBA.
- Python
- Nastran/Patran.
- Abaqus/CAE

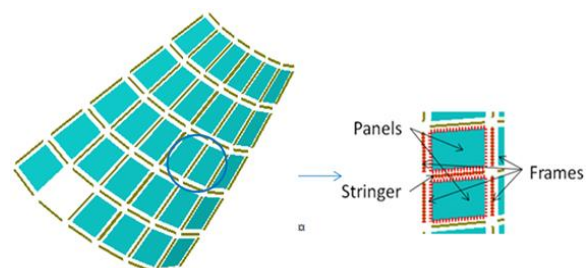


Figure 2. Elements analyzed