

Finite Element Modelling

Supporting airframe, store carriage and engine intake design, from concept to certification

Our capability

Linear analysis

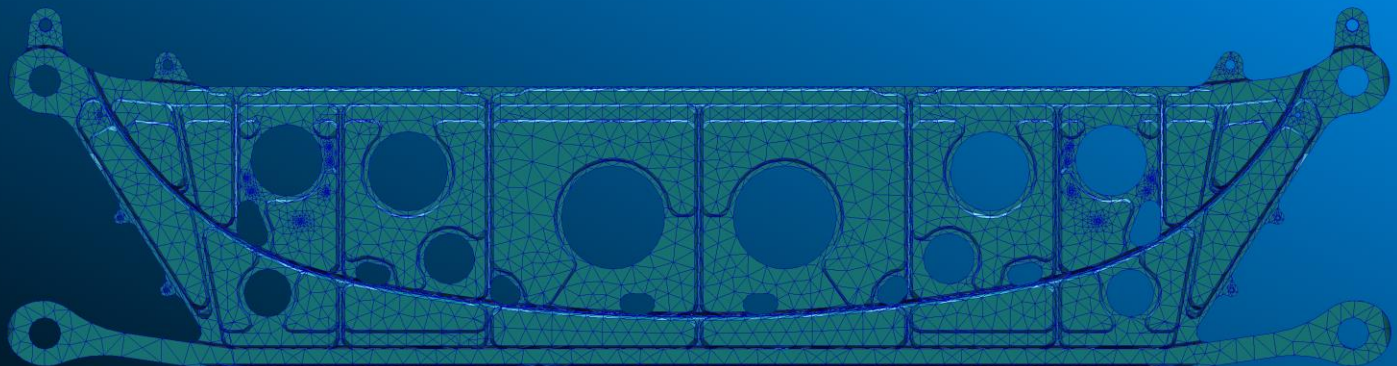
- Load path determination through complex structural assemblies and components (metallic & composite)
- Detailed 3D solid models generating accurate stress fields in close proximity to structural features
- Buckling analysis
- Normal modes and vibration response
- Thermal environment analysis

Non-linear analysis

- Assessment of the onset of buckling and post-buckled structural behaviour
- Modelling of progressive material damage and failure (metallic and composite)
- Composite structure analysis and damage assessment
- Detailed analysis of contact conditions at interfaces and fastened joints
- Analysis of non-linear geometrical behaviour such as beam-column effects
- Bird strike analysis on airframes, intakes & Filters
- Tyre burst impact analysis

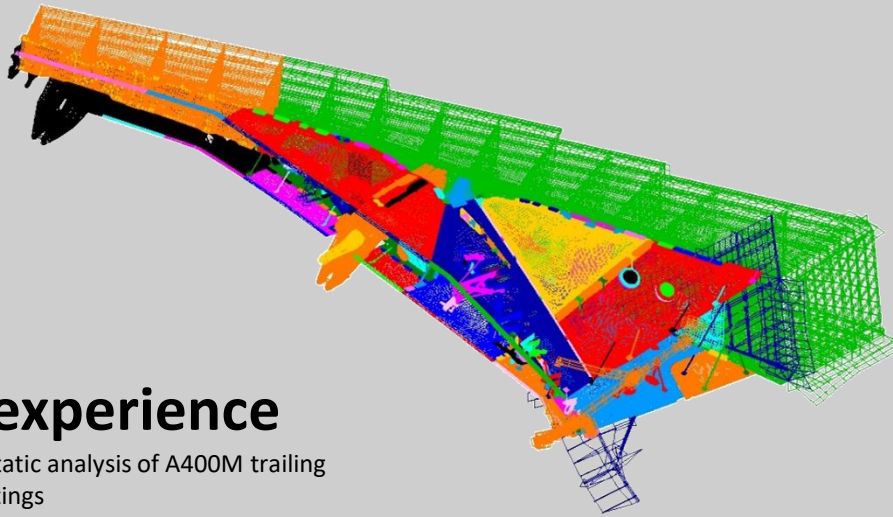
Delegated Signatories

- FEA Approval for A350 FTE & A400M



Cascade Aerospace Engineering

Conception Development Certification



Our experience

- Linear static analysis of A400M trailing edge fittings
- Non-linear static analysis of A380 wing tip and fence
- Bird strike analysis of multiple aircraft wing leading edges
- Linear static analysis of A320 leading and trailing edge structures
- Static analysis of handling and assembly loads on A350 wingbox structures
- Analysis of structural test specimens in support of the test
- definition and rig design
- Random vibration analysis of an underwing mounted pod
- Thermodynamic analysis of systems and structures on A400M wing

Software

CAE has a number of engineers experienced in the application of finite element modelling within aircraft structural analysis.

Powerful multi-processor computers are available to allow the rapid analysis of large complex models using state-of-the-art proprietary software such as PATRAN/NASTRAN, ANSYS and HYPERWORKS.



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AS 9100

BUREAU VERITAS
Certification

