



WING DESIGN & DEVELOPMENT

DELIVERING OPTIMISED STRUCTURAL DESIGN AND ANALYSIS
OF WING PRIMARY & SECONDARY STRUCTURES

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CAPABILITY STATEMENT

DESIGN & DEVELOPMENT

- Structural & mechanical design & development, covering composites and metallic materials.
- Structural development through A, B & C-Maturity, optimising structure against design drivers and integrating with partners, suppliers and OEM teams.
- Calculation of wing load conditions, including Flaps, Spoilers, Ailerons, Slats, Thermal and Air Pressure Loads.
- Complex load correlation using computational techniques, including SQL Database Management.
- Systems integration, including fuel, stores, electrical & hydraulic systems.
- Supply chain and RSP management.
- Stress analysis utilising traditional analysis techniques, computational methods, fatigue & damage tolerance, plus linear and non-linear finite element modelling.



EXPERIENCE AT A GLANCE

- A380 Check stress & F&DT Certification.
- A400M EIS Flap Beam Fitting Modification Static/F&DT Design & Certification.
- A350XWB Fixed Trailing Edge (FTE) concept, plateau, C-Maturity, DFEM and certification.
- A350XWB FTE Metallic Hinge Ribs, Actuator Brackets, Intermediate Ribs & False Rear Spar, plus Composite Honeycomb Structural & Shroud Panels.
- A350 Test Definition and Load Correlation Support to FTE Risk Sharing Partner (RSP).
- A350 FTE Load Correlation development, SQL Database creation and loading provision to FTE supply chain.
- Provision of Integration Engineering for A350 FTE, liaising with both Airbus & the RSP supply chain.
- Generation of A350 entire FTE Finite Element Model (GFEM), plus numerous DFEM models.
- A320neo Static Analysis of Wing Root, Leading Edge, Flap Support, Engine Pylon Support, Sharklet and Rib 27.
- A320neo F&DT Certification Analysis of Wing Root, Flap Support & Engine Pylon.



CASE STUDY

A350XWB FIXED TRAILING EDGE

DESIGN & DEVELOPMENT OF ENTIRE FIXED TRAILING EDGE

- Provided decision making level engineers to support the concept & development phase for the A350XWB Fixed Trailing Edge.
- Involved as the Risk Sharing Partner (RSP) representative within Airbus UK, liaising with the supply chain with regard all structural issues.
- Agreed interfaces with RSPs for adjacent Spar, Covers, Moveables, Landing Gear and Systems.
- Agreed structural analysis methods, processes and procedures to be used throughout the package.
- Conducted structural analysis, designed & optimised structure, generated Stress Dossiers for the Metallic Hinge Ribs, Actuator Brackets, Intermediate Ribs & False Rear Spar, plus Composite Honeycomb Structural & Shroud Panels. Reviewed, checked and approved similar data as produced by the RSP supply chain.
- Collaborated with manufacturing, stage and final assembly organisations to allow for the required production rates.
- Involved in the development of the test, verification and validation plan in support of certification.
- Developed and presented PDR & CDR presentations on behalf of the RSP to ensure smooth transition through each milestone gate review.
- Lead RSP Supply Chain through development, manufacturing release and certification.
- Developed GFEM of Fixed Trailing Edge and performed complex big data load correlation activities, providing fully correlated loads to the RSP supply chain.

AIRBUS DELEGATED SIGNATORIES

- Static Metallic Approval for A350 FTE
- Static Composite Approval for A350 FTE
- FEA Approval for A350 FTE & A400M
- Static Metallic Approval for A320 Sharklet & NEO
- F&DT Approval for A320NEO

OTHER APPROVALS

- Boeing Wide Body Stow Bins Lead
- Static Signature for Harrier I & II
- Static Signature for Nimrod MRA4
- QinetiQ GmbH Structural CVE for Pilatus

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WING DESIGN CAPABILITY STATEMENT



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DEPENDABLE ENGINEERING,
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