

# Cascade Aerospace Engineering

## Conception Development Certification

### Pylons & Stores Clearance

Delivering optimised Pylon design and analysis packages for Military & Civil programmes

#### Our capability

- Design Integration – Structural optimization, Material selection, Weight and Manufacturing requirements
- Structural Strength analysis
- Fatigue, Damage Tolerance & Durability analysis
- Dynamic & Stiffness assessment
- High energy Impact assessment
- Simulation, FEA development, Verification & Validation
- Structural test definition and interpretation of results , including verification of Finite Element Models
- Big Data – Database development for large analysis data sets and extraction of relevant information
- Delegated Authority for the Approval of new designs, modifications or repaired structures
- Certification documentation and in-depth understanding of Airworthiness requirements for relevant agencies



#### Our experience

- P-8A Poseidon Wing & Fuselage Stores Pylon F&DT Design & Certification
- Harrier I & II MIL-1760 Upgrade Modification Analysis, Assessment and Stores Clearance
- A400M EIS Flap Beam Fitting Modification Static/F&DT Design & Certification
- A400M Refuelling Probe Static and F&DT Design Analysis
- A320NEO F&DT Certification Analysis of Engine Pylon Wing Side Attachment

#### Airbus Delegated Signatories

- Release to manufacture for Metallic & Composite structure on A350 FTE
- FEA Approval for A350 FTE & A400M
- Static and F&DT Approval for A320NEO

#### Other Historic Approvals

- Boeing Wide Body Stow Bins Lead
- Static Signature for Harrier I & II
- Static Signature for Nimrod MRA4



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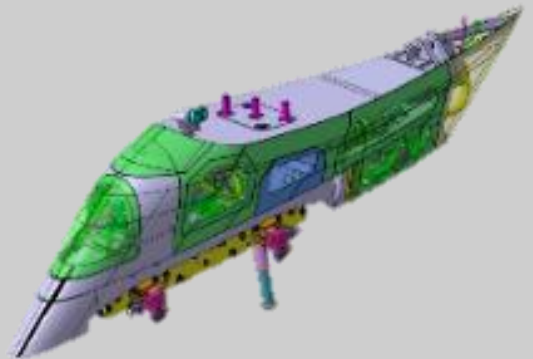
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Experience at a Glance

### Case Study – P-8A Poseidon Pylon Design & Certification

- Supported conceptual design iteration in conjunction with Smiths Industries (now GE Aviation) for both Fuselage & Wing mounted Pylons and integration with associated aircraft hard points
- Introduced novel fully machined component concept for Wing Pylons
- Performed all Structural support activities and acted as Smiths Industries structural representatives during all integration activities with the end customer (Boeing)
- Developed all FEA models and performed all validation and verification activities
- Generated all Design and Certification reports for both Fuselage & Wing Pylons
- Performed all F&DT analysis and spectra development activities, producing subsequent Certification reports
- Supported all manufacturing and industrialisation activities for structural issues
- Post production support and enhanced clearances for new stores introduced post service entry



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BUREAU VERITAS  
Certification

