



®

Engineering Solutions Aerospace



- *Mechanical Design & Drafting*
- *Analysis*
- *Technical Support*

CDI-Aerospace provides a full range of consultative, design, engineering, outsourcing and staffing solutions to the commercial / military aerospace and satellite industries. Headquartered in Philadelphia, Pennsylvania with offices throughout the United States, Canada and Europe, we partner with companies to help improve time-to-market and to complete critical engineering tasks. With more than 50 years experience in the aerospace industry, CDI-Aerospace delivers three core services: Mechanical Design & Drafting, Analysis and Technical Support. In addition, we offer integrated staffing solutions such as engineering / technical staffing and permanent placement.

As one of the largest aerospace engineering and services organizations in the world, CDI-Aerospace maintains one of the most comprehensive and capable engineering staffs in the industry with extensive experience in both commercial and military programs. Our size and position in the aerospace industry has helped facilitate preferred supplier status with leading vendors, improving project implementation time while reducing costs.

To learn more visit: www.cdi-aero.com



Three Core Services

Mechanical Design & Drafting

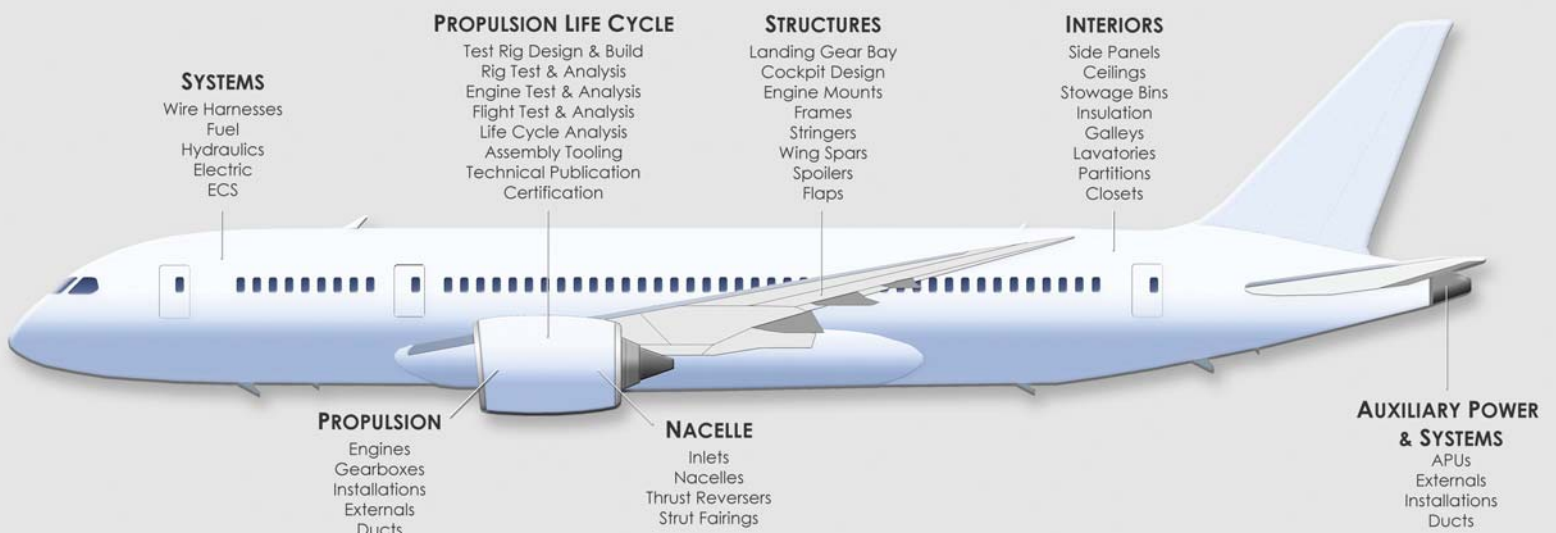
- Airframe Structures (Pressure Vessels, Metallic & Composite Materials)
- Engines & Subsystems (Externals, Hydraulics)
- Turbomachinery (Rotating & Static)
- Conceptual Design (Trade Studies)
- Composites Design
- Manufacturing Engineering

Analysis

- Advanced Analysis (Plastic, Creep, Buckling, Shock, Bird Strike)
- Dynamic Analysis (Modal, Response Spectrum, Random Vibration)
- Stress Analysis (Linear & Non-linear)
- Heat Transfer Analysis (Steady State and Transient)
- Life Analysis (Fatigue and Crack Growth)
- Computation Fluid Dynamics Analysis

Technical Support

- Technical Media / Illustration / Content Management
- Procurement / Contracts Vendor Liaison
- Supply-Chain Logistics / Management
- Program / Project Management / Program Planning & Control
- Reliability & Maintainability / System Safety & Human Factors
- Integrated Logistics Support Plan





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Mechanical Design & Drafting Services

Mechanical Design & Drafting combines both technical and program management capabilities to meet the most complex aerospace design challenges. From detail design of small rotating and static engine components, electrical-mechanical control surfaces and complete systems to large conceptual design of airframe structures, CDI-Aerospace has the mechanical design & drafting experience needed to make your project a success.

Core Design Capabilities

- Airframe Structures
- Engines & Gearboxes
- Rotating & Static Engine Components
- Conceptual Design Engineering
- Castings, Forgings, Machined Parts, Composites & Fabricated Parts

Specific Applications

- CAD Solid Model Creation and Validation
- Weight / Cost Reduction Trade Studies
- CAD Modeling / Layout Design
- All Disciplines of Conceptual Design
- Design Drafting per ANSI Standards
- Geometric Dimensioning Studies
- CAD Drawing Conversion
- Turnkey Design, Drafting, Checking
- Managed Build Raster Editing
- Mechanisms / Components
- Castings, Forgings, Machined Parts
- Composites and Fabricated Parts
- Test Rigs / Test Cells
- Form-Fit-Function

Airframe Structures

- Pressurized Cabin
- Empennage
- Control Surfaces
- Cabin and Cargo
- Modifications
- Retrofits
- Subsystems & Hydraulics
- Stringers
- Spars
- Panels

Engines & Nacelles

- Engine Gearboxes and Accessories
- Mounts, Externals and Installations
- Rotating and Static Engine Components
- Configuration
- Hot/Cold Sections
- Externals



Software Competencies

- CATIA V5
- CATIA V4
- PRO / Engineer
- Unigraphics
- CV CADD5
- Solidworks
- AutoCAD/MDT
- Microstation
- MicroCADAM
- SDRC (IDEAS)
- Cadence
- Formtek



Engineering Solutions Aerospace

Analytical Services

CDI-Aerospace offers complete analytical engineering solutions to complement a client's engineering core competencies. From full structural test support, to simple specimen testing and full scale testing of large structural assemblies, CDI engineers deliver solutions that align precisely to the projects defined goals and specifications. We utilize the latest software tools and our own vast library of knowledge to evaluate the possible environments and risks that could impact the component or the entire system throughout the lifetime of operations. We specialize in commercial, military and private aircraft primary structures, as well as composites, interiors, landing gear, engines, nacelles, struts, and all related secondary structural components.

Core Analysis Capabilities

- Classical Airframe Structural Analysis
- Finite Element Analysis - Steady State and Transient
- Heat Transfer and Thermal Analysis
- Advanced Analysis - Non-Linear Material, Contact, Geometric
- Dynamic Analysis - Modal, Frequency Response, Vibration, PSD, Full Transient (Explicit)
- Life Cycle Analysis (Fatigue, Crack Growth, and Damage Tolerance)
- Computational Fluid Dynamics
- Gear & Gearbox Analysis
- Mass Properties Analysis

Turbomachinery Capabilities

- Finite Element Analysis
- Combustion Analysis
- Aerodynamic Analysis
- Performance Analysis

Airframe Structure Capabilities

- Finite Element Analysis
- Durability and Damage Tolerance
- Hand Calcs
- Crack Growth Analysis
- Repairs Analysis (Fleet Support)
- Residual Strength Analysis



Software Competencies

- NASTRAN
- PATRAN
- ANSYS
- ANSYS WORKBENCH
- MATLAB / SIMULINK
- ABAQUS
- FEMAP
- COSMOS
- COSMOSWORKS
- CRACKS 98
- NASA / FLAGRO
- FLUENT
- DYTRAN
- LS/DYNA
- CFX



Engineering Solutions Aerospace

Technical Support Services

CDI-Aerospace technical support services provide clients with functional expertise to ensure total supply chain quality. From creating and maintaining procurement and quality assurance processes to complete supply chain logistics management and project management, CDI-Aerospace complements our clients' customer support and engineering functions.

Core Capabilities

Technical Media – Authoring/Illustration

CDI-Aerospace produces all types of technical media, and is an industry leader in providing documentation services to our clients, whether the task is simple revisions to existing data, the development of new documentation, or assumption of all technical media functions.

Procurement/Supplier Quality Assurance

CDI-Aerospace personnel skilled in procurement methods work in unison with manufacturers to monitor work in process and help improve capacity planning to improve performance and delivery schedules.

Supply-Chain Logistics/Management

We provide supply-chain logistics and management of products for manufacturing companies. Personnel skilled in hardware expediting and administration methods work in unison with the manufacturer to provide product movement and tracking between process-step locations within the manufacturing facility, suppliers, and the customer.

Program/Project Management/Program Planning & Control

Working closely with the customers and program/project team, our personnel can plan, initiate, execute and control the program tasks, costs and schedule. By applying the knowledge, skills, tools and techniques, as necessary, CDI-Aerospace personnel can meet program objectives and requirements.

Specialty Engineering

Specialty Engineering includes Reliability, Maintainability, Human Factors, System Safety, and Logistics Support Engineering. These functional activities can be performed for product conception to product phase out. This includes complete program task activity from program plans to qualitative and quantitative analyses of specialty engineering attributes.

In addition to these functions, CDI-Aerospace also offers content management system integration experience as a solution for complex data management and reuse.



Applications

- Arbortext
- FrameMaker & SGML
- Interleaf plus SGML
- QuickSilver
- MS Office Professional
- MS Project
- IADS
- Multi Doc Pro
- Word Perfect
- Adobe Acrobat
- Macromedia Flash
- MS FrontPage 2000
- VISIO
- OmniPage PRO



Contact Us

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CDI-Aerospace is part of CDI Engineering Solutions – a provider of high-value engineering outsourcing services to clients in the Aerospace, Life Sciences, Process & Industrial and Government Services sectors. CDI Engineering Solutions is a division of CDI (NYSE:CDI), a leading provider of engineering and information technology outsourcing solutions and professional staffing.