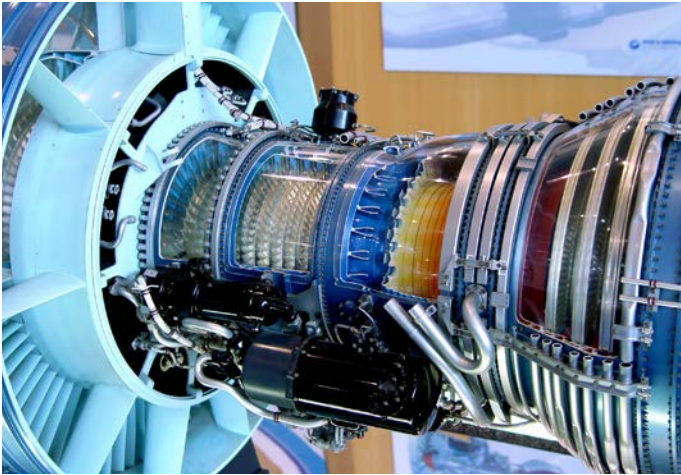


CYIENT

# YOUR GLOBAL DESIGN-BUILD- MAINTAIN PARTNER FOR THE A&D PRODUCT LIFE CYCLE

Building collaborative relationships with clients to deliver  
leading-edge solutions for OEMs and Tier 1 suppliers





**THE AEROSPACE AND DEFENSE INDUSTRY IS UNDER CONSTANT PRESSURE TO REINVENT ITSELF—DO MORE, AND DO IT BETTER. CYIENT TAKES PRIDE IN PARTNERING WITH THE WORLD'S LEADING A&D COMPANIES AND DELIVERING VALUE-DRIVEN AND OUTCOME-BASED SOLUTIONS.**



## Overview

The need to reduce product size, weight, power, and costs while increasing production volume is a constant challenge in the aerospace and defense (A&D) market. As emerging technologies disrupt the industry, advanced engineering techniques combined with digital solutions and spiraling customer expectations are placing immense pressure on suppliers to optimize business operations and processes.

With our rich experience and domain expertise, Cyient is well positioned to help A&D OEMs and Tier 1 suppliers to transform their product life cycle. We collaborate with clients to support and deliver a wide range of end-to-end product and process engineering solutions across the A&D product segments: aeroengines, avionics, aerostructures, aero systems, and interiors.

We undertake system-level ownership and provide discipline-level support across systems and subsystems. This has helped us maintain our leadership position in global engineering R&D ratings over the years and also established our capabilities in engineering excellence—a fact that has been attested through the many awards we have received from OEMs.





## The Cyient Edge

Our solutions are compliant with ITAR and nation-specific restrictions complying SCIFs with both DCID 6/9 and JAFAN 6/9 security standards for commercial or government use up to top-secret level. We also have Design Approval #166 from CEMILAC (Center for Military Airworthiness and Certification) under the following scope: "design, development of aerostructures, interiors, aeroengines and systems, aero systems, and avionics for military airborne applications."

### **Improve production rate:**

We leverage our engineering expertise and comprehensive industry experience in mechanical systems, avionics, and aerostructures, backed by robust processes and an innovative approach, to reduce time-to-market for products while managing costs and related risks.

### **Achieve digital transformation and agile operations:**

We combine domain knowledge, data science, and digital technologies to enable digital transformation for our clients with an agile and outcome-based approach. By leveraging advanced analytics capabilities, we convert data into reliable, actionable insights that enhance decision-making and help you maintain the competitive edge.

### **Make in India:**

Cyient has established itself as a preferred partner for OEMs to leverage the potential of the "Make in India" initiative. We help maximize offset obligations by partnering, collaborating, and co-developing successfully with engineering and manufacturing firms that facilitate "Buy Indian-IDDMM."

### **Integrate design, build, and maintain solutions:**

With more than two decades of experience as a risk-sharing partner, Cyient is uniquely positioned to offer clients the benefits of integrated design, build, and maintain solutions, and transform the A&D product life cycle.



This image was taken at the Cyient DLM facility in Mysore, India.

# AEROENGINES

From concept design to aftermarket services for aircraft engines, we provide OEMs with global resources to develop innovative and comprehensive solutions to increase the efficiency of aircraft gas turbine engines.

We provide system-level design solutions on internal flow, lube, thermal management systems, and rotor dynamics from concept to certification; and have delivered designs with complete ownership of actuation systems, compressor cases, bladed discs, rotors, and aerofoils. Through our multidisciplinary design optimization approach to value engineering, our solutions help achieve weight and cost goals at the prototype stage.

Our robust processes and use of advanced tools and technologies help us shorten engine design and development cycle times with improved analysis predictability.

## Capability Highlights

- Over 15 million hours of experience
- Over 25 co-patents
- IPT (Integrated Product Development Team)-level engagement
- Multi-million-dollar productivity delivered each year

## Key Offerings

### New development programs

- Concept design-to-certification collaboration
- Technology and IP development collaboration
- New tools and process development
- Rig design, pre-test, and post-test support
- Conversion of aeroengines to industrial applications

### Operational commercial programs—product improvement

- Cost and weight reduction
- Technology insertion
- Localization and transition
- Engineering change execution
- Repairs development
- Field management plans

### Legacy engine programs—reengineering

- Part scanning, metrology/CMM, and modeling
- Validation through analysis and test data-match
- Standard work updates
- Vendor coordination and end customer installation support



# AEROSTRUCTURES

Cyient provides innovative wing and fuselage subassembly design solutions—from preliminary design to weight optimization and certification. We work in collaboration with leading aircraft OEMs and Tier 1 suppliers to deliver improved efficiencies.

By combining customer-specific design processes with our extensive metallic and composite structures knowledge, value engineering techniques, and design automation expertise, Cyient helps design cost-effective aerostructures. We manage aftermarket value streams, manufacturing, stress justifications, and design office dispositions after signatory approvals throughout our customer engagements.

As a preferred risk-sharing partner, we focus on delivering innovative products that will reduce fuel consumption, increase life expectancy, and lower operating cost.

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## Capability Highlights

- Over 5 million hours of experience
- Significant weight savings delivered on aircraft wing structures
- Over 40,000 first article inspection reports reviewed
- Award-winning contribution made to the latest wide-body aircraft

## Key Offerings

- End-to-end aircraft structures life cycle management including certification support
- Composite structures design, analysis, and layup tool manufacturing
- Production concessions and post-production engineering
- Reliability and retrofit engineering
- Legacy conversions and design automation





# AVIONICS

Cyient collaborates with avionics OEMs worldwide, helping them develop innovative, end-to-end avionics systems—from requirements definition to certification. Our solutions are compliant with RTCA DO-254, RTCA DO-178C, RTCA DO-160G, and MIL-STD-810F. Additionally, our manufacturing facilities are AS9100C and Nadcap approved.

## Capability Highlights

- Over 5 million hours delivered on various avionics products
- Design Assurance Level (DAL) A-E product design ownership
- Direct experience with all Stage of Involvement (SOI) audits
- FAA, EASA, Transport Canada, ANAC, and MIL-STD certification experience
- Fully automated test platforms (Black Box-LRU, Grey Box-CCA, FPGA-PLD)
- Patents for design and test, including CertSAFE™ and CertBENCH™
- Full life cycle solutions for embedded software and electronic hardware
- FPGA design, development, and verification

## Key Offerings

Our safety-critical certification engineering services focus on rapid automation of requirements capture, simulation, and validation and verification testing, in turn, reducing project timeline and costs.

Our early involvement in the product development life cycle greatly improves the ease of obtaining certifications by minimizing costly rework. Independent Verification and Validation is applied in the beginning to ensure the system requirements are complete, concise, traceable, and testable.



# AERO INTERIORS

Cyient partners with clients to design optimized, spacious, and aesthetic cabin interiors—be it in cabin structures, seating, monuments, cabin avionics, or in-flight entertainment (IFE). We focus on delivering innovative and lightweight interior designs for both commercial and business aircraft in the areas of floor-to-floor cabin structures, galleys, overhead stowage, and lavatory. Cyient also offers customized solutions for VIP aircraft.

Throughout our customer engagements, we integrate our composite design, stress, tubing design, electrical schematic, and harness routing expertise to deliver innovative solutions that solve design challenges and enhance the onboard passenger experience.

## Capability Highlights

- Over 3 million hours of experience
- More than 100 design ideas proposed
- Multi-million-dollar productivity savings delivered
- Key contribution in major aircraft programs

## Key Offerings

- Full design ownership across all cabin interior elements
- Mechanical design and analysis, design automation
- Electrical wire harness and routing
- Production drawings
- Manufacturing engineering





# AERO SYSTEMS

Cyient enables leading global aero systems suppliers to maximize their design, structure, thermal, and CFD analysis capabilities and optimize products for weight and cost. Our team provides sub-system level engineering solutions for the following aircraft systems categories:

- Air management systems
- Engine controls
- APUs
- Electrical systems
- Actuation systems
- Nacelle and thrust reverser
- Fuel and hydraulics systems

By enhancing system reliability, implementing technology upgrades, and eliminating the root cause of field failures, our aircraft value engineering approach is integral to lowering part count, improving commonality across programs, and enhancing the manufacturing and maintenance process.

Our aftermarket value streams such as repair engineering, technical publication, and reliability engineering help in generating higher services revenue for our clients.

Our capabilities include managing test execution, analyzing data, and comparing test results with certification and design requirements to deliver qualification plans and documentation in accordance with DO-160 standards. Our software solutions are certified to DO-178C and DO-330 standards.

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## Capability Highlights

- Over 3 million hours delivered on major aircraft systems
- Process innovation: design automation tools, in-house developed tools, macros enabling productivity savings, and reduction in development cycle time

## Key Offerings

- Part scanning, metrology/CMM, and modeling
- Validation through analysis and test data-match
- Standard work updates
- Vendor coordination and end customer installation support





# DESIGN LED MANUFACTURING

Cyient offers a unique value proposition to our customers through our Design Led Manufacturing (DLM) solutions. We collaborate and co-develop solutions that are customized to specific design requirements at our DLM facilities as well as provide on-site support to clients across all A&D business segments.

By offering complex and advanced DLM solutions, Cyient takes an integrated approach to manufacturing, in turn, enhancing our position as a preferred partner to meet offset requirements. Our integrated processes are being used for cost reduction, functionality enhancement, and product optimization in the areas of avionics, mechanical systems, and aftermarket.

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## Capability Highlights

- High-precision machining, plastic injection molding, and additive manufacturing
- Strong manufacturing engineering process for electronic manufacturing
- Embedded software and hardware, including avionics and electrical systems
- Robust supply chain ecosystem and localizing capabilities

## Key Offerings

- Value engineering: reverse engineering, obsolescence management, and product optimization and enhancement
- System build and product assembly
- System modernization programs using modular avionics
- Test engineering and test facility
- Access to emerging markets and offset realization



# AFTERMARKET SOLUTIONS

As a reliable and innovative aftermarket solution partner, we contribute to your business objectives by increasing revenue and profitability. Our main aftermarket solution streams include:

- Repair engineering and product documentation
- Reliability and performance engineering
- Digital aftermarket solutions
- Customer technical support

By leveraging a range of digital technologies such as IoT, data visualization, analytics, and cloud, we enable our clients to remain competitive and ahead of the industry curve. Our unique operating model and solutions help monetize aftermarket operational data, assets, and work scope; to achieve a low cost of maintenance and high availability of systems.

## Capability Highlights

- \$1.7 million savings achieved by delivering effective warranty management software
- 200+ design concepts proposed and implemented across 60+ aftermarket processes
- 30% reduction in publication cycle time
- Optimized inventory management resulting in cost savings of up to 10%
- Client drag reduction through 100% ownership of field event

## Key Offerings

- Repair engineering and product documentation
- Product performance engineering
- Digital aftermarket solutions
- Data integration and predictive analytics





# DIGITAL TRANSFORMATION

We have more than two decades of data science experience in designing aircraft systems and managing data from multiple subsystems and complex inter-functional systems. These include real-time asset health monitoring, predictive analytics solutions, simulation models for system behavior, intelligent forecasting and scheduling models, and root cause analysis for complex and inter-dependent system failures. By truly embracing the concept of digital transformation we help our clients connect the dots, connect systems, and reimagine operational and business processes, in turn, ensuring a seamless digital transformation within the A&D marketplace.

## Capability Highlights

- Reduced downtime and increased visibility into performance
- Improved maintenance and preventative measure planning
- Reduced costs and increased revenue
- Connected aircraft and improved passenger experience

## Key Offerings

- Asset management: asset health monitoring dashboard, predictive maintenance alerts, and data-driven reliability control
- Inventory management: spare part optimization and profitability models
- Intelligent scheduling and forecasting models
- Predictive data solutions

## About Cyient

Cyient (Estd: 1991, NSE: CYIENT) provides engineering, manufacturing, geospatial, networks, and operations management services to global industry leaders. We leverage the power of digital technology and advanced analytics capabilities, along with domain knowledge and technical expertise, to solve complex business problems. As a Design, Build, and Maintain partner, we take solution ownership across the value chain to help our clients focus on their core, innovate, and stay ahead of the curve.

Relationships lie at the heart of how we work. With more than 15,000 employees in 21 countries, we partner with clients to operate as part of their extended team, in ways that best suit their organization's culture and requirements. Our industry focus spans aerospace and defense, medical, telecommunications, rail transportation, semiconductor, utilities, industrial, energy and natural resources.

For more information, please visit [www.cyient.com](http://www.cyient.com)

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