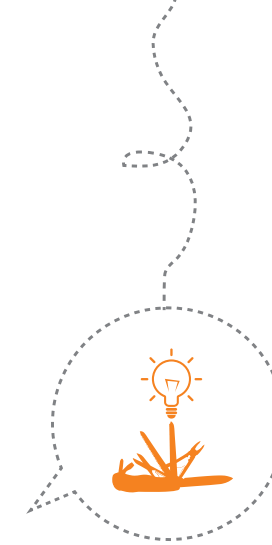


HCL IN AEROSPACE AND DEFENSE



THE NEW NORMAL

The Aerospace and Defense sector is going through major economic, socio-political, and demographic changes in the US and across the world. The aerospace and defense industry needs to adapt to challenging security concerns, sequestration, an aging work force, and increasing globalization to remain competitive.

HCL CORPORATION

HCL is a \$6.2 billion global technology and IT enterprise. HCL was founded in 1976 and is one of India's original IT garage start-ups. Our range of offerings includes custom and package applications, product engineering, BPO, IT infrastructure services, IT hardware, systems integration, and distribution of information and communications technology (ICT) products across a wide range of focused industry verticals. The HCL team consists of over 90,000 professionals of diverse nationalities, who operate from 26 countries.

HCL'S AEROSPACE AND DEFENSE PRACTICE

Aerospace and Defense is a core focus area for HCL. HCL works with seven of the top ten leading aerospace companies in the world. HCL has been chosen as partner by forty aerospace and defense companies to transform their business. HCL's Aerospace and Defense business unit meets the most stringent quality and security standards, including ISO 27001, AS 9100 Rev C, and CMMI Level 5, and is compliant with DO 178B, DO 178C, DO160E, and DO 254 requirements. HCL has extensive experience in providing services to US aerospace and defense vendors from our ITAR-compliant delivery centers.

HCL SERVICES AND SOLUTIONS FOR AEROSPACE AND DEFENSE SECTOR

Services

- Enterprise Application Services: Enable business transformation through ERP implementations.
- Application Maintenance and Support: Delivered through our unique ALT ASM™ framework.
- Business Intelligence and Analytics: Business intelligence solutions that help companies sort through and make sense of the enormous amounts of data they generate.
- Mobile Enablement: Mobility solutions that enable organizations to become more productive and customer centric by making information available at the right time to the right person.
- Avionics: Over 7,000 person years of experience in avionics — specific programming languages, methodologies, tools, operating systems, compilers, and standards.
- Engineering Design: Develop solutions across the product development life cycle.

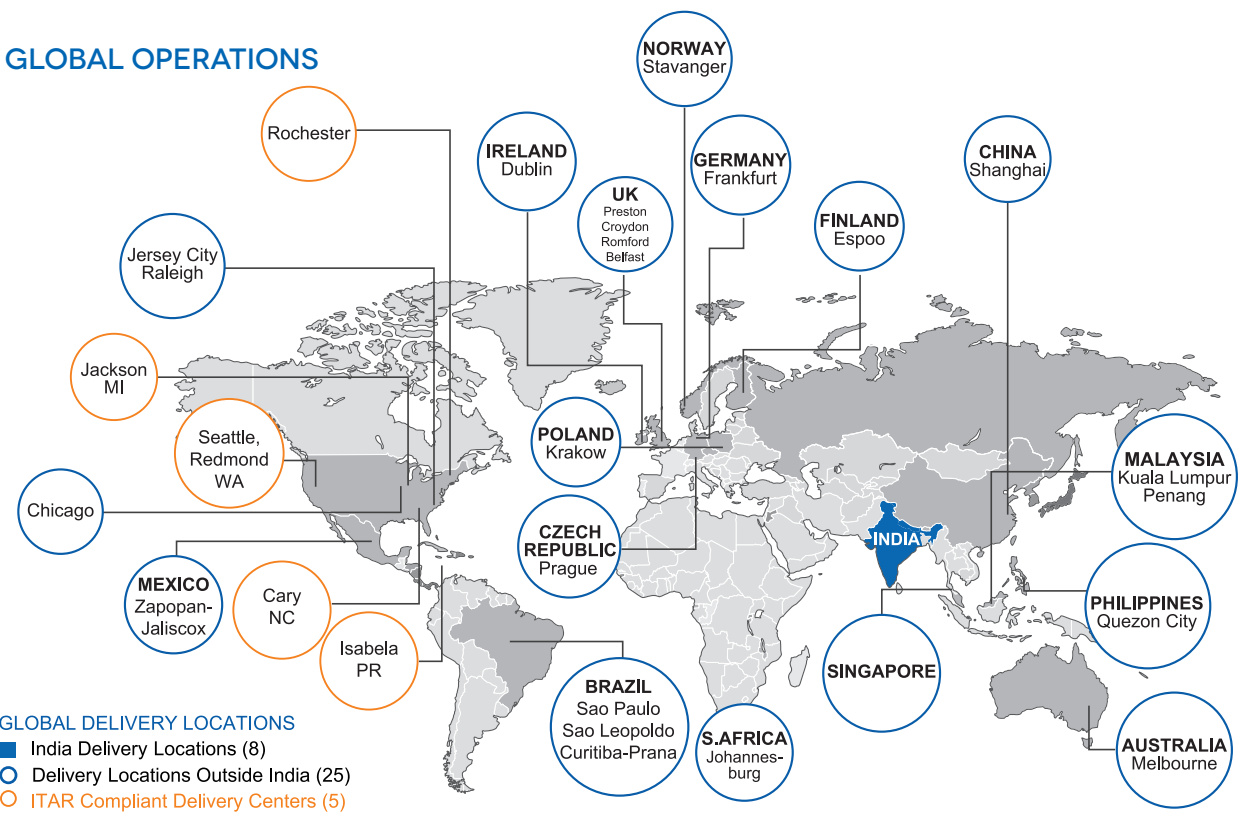
- Defense and Security: Extensive experience working with major military aircraft programs.
- Manufacturing: Low-volume manufacturing, prototype manufacturing, sheet metal, environment testing, and final product testing.

Solutions

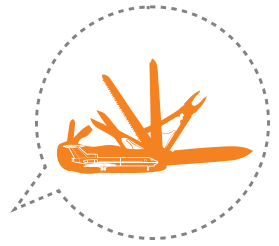
- Ready-to-Make (RtM™): HCL's Aerospace and Defense Manufacturing industry solution includes SAP Pre-Configured Reference System.
- iMRO™: SAP and HCL's industry solution add-on for Maintenance, Repair and Overhaul.
- Supply Chain Assessment Framework (iSCM).
- Boundary Scan Resource Unit (BSRU): HCL BSRU is a JTAG compatible unit to test both JTAG and Non-JTAG circuits.
- Enhanced Vision System: Computer vision and image processing offers enormous opportunity for product development in the aerospace industry.
- gTESTER-100: gTESTER-100 offers Card Edge functional test of analog and digital PWAs and Boundary Scan Tests for PWAs with JTAG compatible chips.



GLOBAL OPERATIONS



Multi-tenant : Supports Multi-service & clients	Scalable	Proximity to Customer needs and Talent Availability	Standardized Delivery: Local Company with Global HCL standards
Follow the sun capability	Culturally Diverse		De Risks Security, Data Sensitivity and Regulatory Issues

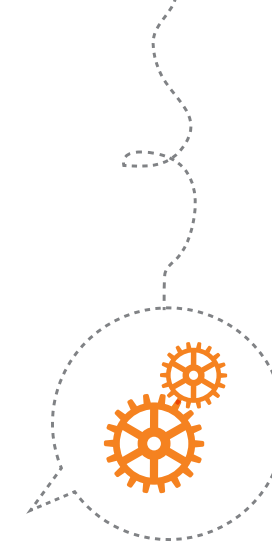
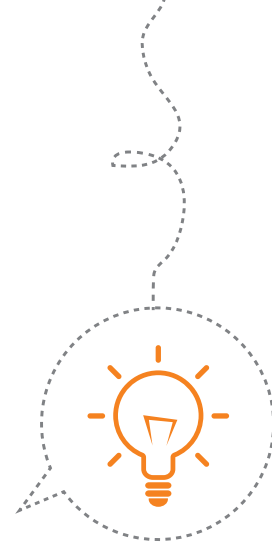


APPLICATIONS SERVICE OFFERINGS FOR AEROSPACE AND DEFENSE

HCL has built its Aerospace and Defense practice over the past 20 years working with leaders in the industry. HCL's service offerings for the aerospace and defense industry include:

- **ERP led business transformation:** HCL is consistently positioned as a leader in SAP implementations by all leading analysts. HCL has successfully delivered over 2000 ERP transformation programs across multiple industry segments. HCL delivers large transformation engagements in a risk and reward model with a focus on business outcomes and through operational excellence. Our IPs in the aerospace and defense sector include accelerators like Ready-to-Make™ and iMRO™.
- **Application Maintenance and Support:** HCL's alternative approach to Application Maintenance and Support ALT ASM™ for the Next Gen Outsourcer is based on proactive obsolescence. ALT AMS™ uses its IP driven tools and methodologies such as MaSCoT™, ASSET™, and PRIZM™ to shift the focus from IT metrics and tickets resolution to process visibility, proactive ticket elimination through Lean Principles, monitoring Business KPI's, with an aim to generate value in each engagement.

- **Business Intelligence and Analytics:** HCL has extensive experience in building and delivering comprehensive analytics solutions for our clients. We ensure that our customers have the ability to access key information rapidly in order to make real-time business decisions. Through the integration of multiple-source data on a large scale platform, we help to lower the total cost of data and Business Intelligence IT assets, while increasing operational efficiency. Our service offerings in Analytics include Big Data Analytics, Predictive Analytics for Maintenance, Digital Process Analytics, Social Analytics, Retail Framework, and Supply Chain Analytics.
- **Mobility:** HCL's mobility services cover a broad range of capabilities, spanning mobile software application development (native/hybrid /mobile Web), product design and development, hardware design, and firmware basic input/output system (BIOS) and diagnostics services to real-time operating system (RTOS) development for Windows mobile, Android, Symbian, iOS, and RIM ecosystems, VLSI design, verification and validation services, and new product realization. HCL has established partnerships with SAP, Oracle, ARM, Texas Instruments, WiFi alliance, IEEE, Microsoft, ITU, and dlna to support its clients' IT and mobile ecosystem.



INDUSTRY SOLUTIONS FOR AEROSPACE AND DEFENSE

HCL offers a comprehensive range of aerospace and defense solutions to its clients across the globe. They include:

iMRO™

SAP and HCL Enterprise Application Services's industry solution add-on for Maintenance, Repair and Overhaul/ Operations (MRO). It is an SAP complementary software product which extends SAP ERP MRO for any company which maintains a complex, expensive and regulated asset such as in aerospace and defense, transportation, hi-tech, or energy. iMRO helps organizations control cost, simplify processes, reduce turn-time variability and improve planning and scheduling.

Aerospace and defense organizations using the iMRO solution can benefit from higher asset utilization, fewer unplanned schedule interruptions, faster revenue growth and easier and more accurate billing. The solution also provides better cost and profitability visibility for external contracts, including fleet management agreements with performance-based pricing.

ReadytoMake™ (RtM)

ReadytoMake is HCL Enterprise Application Service's (EAS) all-in-one preconfigured SAP ERP solution for

organizations that manufacture and support complex assemblies such as aircraft, ships, transport infrastructure, hi-tech and construction, energy or industrial equipment, and heavy machinery. It builds on SAP Business Suite (Production, Supply chain, Sales, Customer Service, Product Life-cycle Mgt., Project Systems, Finance, Human Capital Mgt., Procurement, Work-flow, Business Analytics and Budgeting modules), SAP's discrete industries solution, and HCL EAS's industry solutions for Manufacturing Execution and Maintenance, Repair and Operations (iMRO™). These solutions are supplemented by a vast library of preconfigured best practices, flows and scripts, user step by step guides, data load and conversion templates and industry specific reports and dashboards.

iSCM

HCL's iSCM is a portfolio of solutions, backed by real-time analytics that improves forecasting accuracy, optimizes inventory levels, facilitates collaboration, enable real-time visibility of extended supply chain and manufacturing operations, and promote seamless synchronization between demand and fulfillment.

iSCM Solution Components

Demand-Supply-Inventory (D-S-I) Evaluator

TOUCHSTONE®

iVISION Visibility & Collaboration Solution

ENGINEERING SERVICES

Having pioneered offshore engineering services in the aerospace & defense industry more than a decade ago, HCL aerospace engineering has become the largest dedicated aerospace practice in India and the preferred engineering partner for new aircraft programs across the A&D ecosystem, offering services in avionics, hardware engineering, embedded software engineering, mechanical engineering, test engineering, and manufacturing support. In the past decade, we've successfully executed projects in various subdomains and have partnered 7 OEM's and 40+ Tier-1 manufacturing companies. Our specific subdomain services include:

- **Avionics** – We are a one-stop solution provider in avionics engineering providing services across aerospace software/hardware engineering, and aerospace systems. HCL provides integrated product engineering services supported through state-of-the-art labs and centers of excellence (CoEs)
- **Mechanical Engineering** – Offer services ranging from floor-to-floor, to seats and monuments, and also provides services in aero structures and aero engines
- **Test Engineering** – One of India's leading aerospace test engineering service providers providing testing support for all types of flight test scenarios through the use of Automated Test Equipment (ATE)
- **Manufacturing Support** - Provide manufacturing support in fabrication and assembly phases through

services like process planning, CNC programming and jigs, fixtures and tooling

- **Simulation and Training** - Cater to the simulation and training needs by providing engineering support for visual database systems, GIS data analysis functions and systems simulation

IT INFRASTRUCTURE SERVICES

HCL is the Fastest Growing Infrastructure Services Provider in the world over the last 3 years and has the highest CSAT for Infrastructure Services in the Industry.

HCL has evolved from being a pure play IT Operations to a transformational player offering a Plan – Design – Implement – Operate – Optimize service across all the elements of IT Infrastructure lifecycle. Today, it has more than 18,500 certified professionals across 5 continents, servicing over 250+ Global customers including 20 Fortune 100 customers, and is widely recognized by the analyst community as the leading Remote Infrastructure Services provider globally.

HCL understands the Infrastructure services mind-set of its customer and the Employees First Customers Second (EFCS) philosophy of the company helps add value and create delight in the high-stake Infrastructure business. HCL ISD has executed more than 580 transformation projects across End-User Computing, Data Center, Managed Network and Security Services, and Cross Functional Services service lines for its customers.



HCL HELPS DELIVER WORLD-CLASS PERFORMANCE AND GROWTH THROUGH A GLOBAL TEMPLATE

THE CUSTOMER: One of the world's largest suppliers of technologically advanced aerospace and defense products, headquartered in the US, with 177 sites operating in 26 countries including US, UK, Mexico, France, Germany, Brazil, Singapore, India, UAE, China, Australia, Canada, Hong Kong and Poland.

BUSINESS CHALLENGES

- Numerous legacy systems, site-specific processes, lack of reporting and visibility across the enterprise
- Need to deliver world-class levels of performance and growth by aligning the company's business units on a common operating platform with best-in-class business processes

HCL STEPS IN

- Engaged with the customer to deliver a global strategic program to consolidate all operating divisions (USD 8Bn) onto a single, global ERP solution
- Developed and enabled roll-out of a Global Template across numerous business units in the United States, United Kingdom, Mexico, France, Germany, Brazil, Singapore, India, UAE, China, Australia, Canada, Hong Kong and Poland

BUSINESS OUTCOMES

- Developed common business processes and metrics
- Achieved automation and compliance of contractual requirements (commercial and governmental)
- Reduced overall ticket times
- Achieved "60 second" induction times for MRO
- Improved reporting across the enterprise
- Improved spares forecasting and on-time customer delivery
- Reduced excess inventory
- Retired numerous legacy systems
- Achieved Single Global Instance bringing 16,000 users across 20+ countries together on a single operating platform

HCL DIFFERENCE

- Key accelerators (pre-configured MRO solution, multi-level shortage reporting) which provided significant business benefits and reduced development costs.
- Experienced consultants with deep Aerospace and Defense industry expertise and knowledge of complex requirements (government contracting and billing, actual costing, discrete manufacturing, MRO, regulatory reporting) enabled the development and deployment of a robust global solution.
- Strong project methodology and governance model (includes business and IT representatives) which kept the project on time and budget.
- Post-acquisition, the customer regards this template as best practice and will continue to leverage it for future roll-outs to the business units through 2015.



HCL COMPLETELY REDESIGNS THE ENTIRE AIRFRAME OF AN AIRCRAFT IN AN ACCELERATED TIMEFRAME.

THE CUSTOMER: A global aeronautical OEM active in the military and civil markets.

BUSINESS CHALLENGES

The customer had a high priority requirement to produce an aircraft model in a critical schedule using lean manufacturing techniques. The major challenge was to redesign the complete aircraft model in a short duration of 14 months. The other challenges included

- Accelerated product development
- Employing lean manufacturing techniques into the redesign of the aircraft model
- Embodiment of major and minor modifications during redesign

HCL STEPS IN

- HCL completely redesigned the airframe of the aircraft from nose to tail.
- Clash analysis performed on the redesigned airframe and made it completely clash free.
- Worked on 20,000+ aerostructures components - Front Fuselage including NLG box, center fuselage plus wing box, rear fuselage and empennage, MLG fairings and doors, wing-fuselage and tail-fuselage fairings etc.
- HCL is the only Indian engineering services company to have executed such a large aerostructures program.

BUSINESS OUTCOMES

- Optimized the assembly sequence to save 3% assembly cycle time
- Achieved 4% weight reduction in structural assembly by reducing part counts, optimized material thickness etc.
- Ramped up to 380 FTEs in 12 weeks to bring down the time to market for this program, on an onsite-offshore model for greater cost benefit

HCL DIFFERENCE

- HCL was responsible for the successful introduction of more than 20 major structural modifications.
- Significant reduction in cost of program through weight reduction and improved efficiencies in assembly process.
- Direct cost savings of over 40% for the overall program.



www.hcltech.com

Hello there! I am an Ideapreneur. I believe that sustainable business outcomes are driven by relationships nurtured through values like trust, transparency and flexibility. I respect the contract, but believe in going beyond through collaboration, applied innovation and new generation partnership models that put your interest above everything else. Right now 95,000 Ideapreneurs are in a Relationship Beyond the Contract™ with 500 customers in 31 countries. How can I help you?

Relationship™
BEYOND THE CONTRACT

HCL