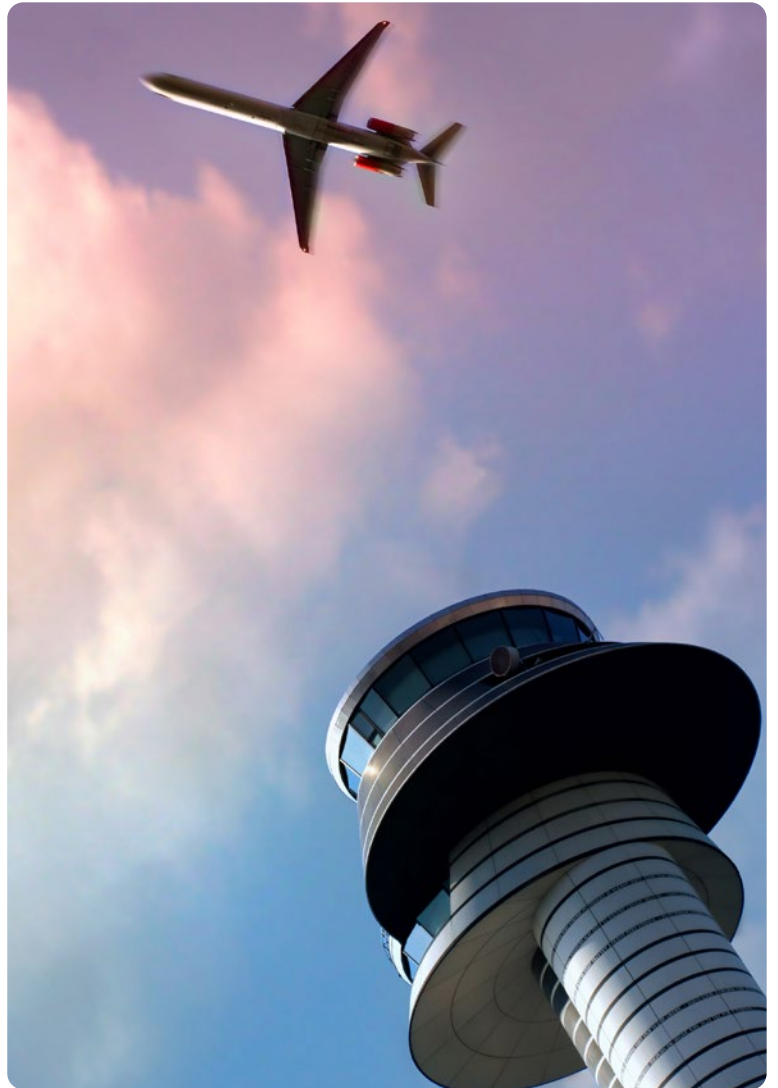# HCLTech | Supercharging Progress™

Supercharging the Future of Connectivity

Next-gen satellite engineering services

The strategic roadmap to a connected world

Digitalization has revolutionized the way users perceive and demand connectivity, placing a premium on "anytime and anywhere" access. This paradigm shift has fuelled a remarkable surge in the demand for Satcom services across various mobility sectors, including on land, water, and in the air. However, the focus has shifted from mere availability to delivering exceptional user experiences. As a result, businesses are witnessing the emergence of new and innovative business models while introducing new and exciting avenues for monetization. This transformative trend highlights the growing importance of staying ahead in the dynamic world of connectivity.

Prerequisites for capturing the massive opportunity

Scalability

Unlock greater scalability and get access to highly skilled talent to meet dynamic customer demands rapidly

Expertise

Build acumen across multiple domains: ground, space, and end-user device segments

Agility

Accelerate end-to-end program development from system requirements to certification

Pioneering the future with cutting-edge capabilities

With a rich heritage spanning over four decades, we at HCLTech have established a reliable foundation for delivering world-class engineering services across diverse industries. Our extensive expertise in Aerospace, Telecom and Networking, Information Technology, and Business Intelligence positions us as a trusted partner in crafting comprehensive connectivity solutions. Drawing from this experience, we bring unparalleled insights and capabilities to drive innovation, reliability, and seamless connectivity for our clients.

Aviation

30+ years of experience

4000+ engineers across SW, electronics, mechanical, PLM and engineering application

Experience in 40+ aircraft subsystems

Certification standards

Apps, Analytics and AI

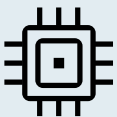30+ years of App experience
80000+ engineers

Hosted services, machine learning, user experience, mobility, cloud integration, big data

IoT WoRKs™

Focus on Asset Value Chain and Business Outcomes

Focus on connected user, connected products, connected infrastructure and connected operations

Devices and Hardware

25+ years of HW Engg experience
1000+ engineers

Sensors, sensor integration, HW engg, test engg, chip/ASIC design/engines, antenna
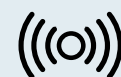
Cyber Security and Data Analytics

25+ years of experience
5500+ engineers

Threat analysis, risk assessment, security software feature development, data governance and warehousing, data science and artificial intelligence

Telecom and Networking

30+ years of Telecom experience
15000+ engineers

60Ghz, networking, communication, connectivity, server system

Full spectrum services enabling fast and reliable connectivity

System

- System, sub-system requirements
- Electrical engineering
- Mechanical engineering
- RF and antenna design and optimization
- Design for manufacture
- Validation, verification and testing
- Aftermarket and technical
- Publications

User Experience & Engagement

- Content management system implementation
- Internet service provider platform
- Integration
- Payment services
- Customer care
- Media management

Network Ops

- Network management
- Monitoring and alerting
- AI/machine learning for service availability and performance
- Traffic shaping and filtering
- Quality of service management

Key differentiators

- **40+ years** of complex engineering experience
- End-to-end product engineering across the network spectrum
- **40+** aerospace systems/subsystems of all DO 178B level
- **60+** SOI Audit participation with DERs
- Space and aerospace antenna qualifications in HCLTech in-house facilities
- 'Center of Excellence' for micro verticals and horizontals including wireless, UC, OSS/BSS
- **$15 Mn+** investment in lab infrastructure for our customers in the areas of equipment testing
- IPs and frameworks in the area of LTE, SDN/NFV, Analytics, IoT

Success stories cementing our expertise

Ensured 100% space complaint of the omni directional TT&C antenna design for satellite application

Scope/ Problem Statement

To carry out the antenna assembly and design validation of the TT&C antenna for the INSAT and IRS series satellites.

Solution

- Design validation with stringent QA process of the product at each level jointly by the HCLTech & ISRO QA team

- Qualification testing of the product for stringent environmental specifications

Business Impact

- ISRO elevated HCLTech's lab status as "Space Lab Qualified by ISRO" – thus making it 100% space compliant

- Matured QA process in place to take up space and defense-related activities that provides 25% effort saving

Reduced 50% manual effort
with RedGSSM system for Homeland Security

Scope/ Problem Statement

To develop end-to-end wireless solutions for Homeland Security

Solution

- End-To-End Design: Concept to Proto build and field trials and customer support, system integration.

- Design, develop and testing of GSM L1 protocol, GSM stack (L2, L3) and GUI SW

Business Impact

- About $1.5Mn savings per annum

- 50% reduction to manual intervention

Enhanced responsiveness by up to 20%
with multi-vendor NMS development for service provider

Scope/ Problem Statement

Complete development of the multi-vendor NMS and integration layer development with various industry-standard NMS software

Solution

- Integrated network Dashboard for over 600 NMS customers with 90000+ devices with complete development, deployment and maintenance solutions

- Dashboard services to service providers and other portal users, including high-priority tickets and notifications

Business Impact

- Up to 20% improved response time on critical applications

- 30% reduced development effort through HCLTech's reusable components

- Better ROI through reduced monitoring effort and improved productivity

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