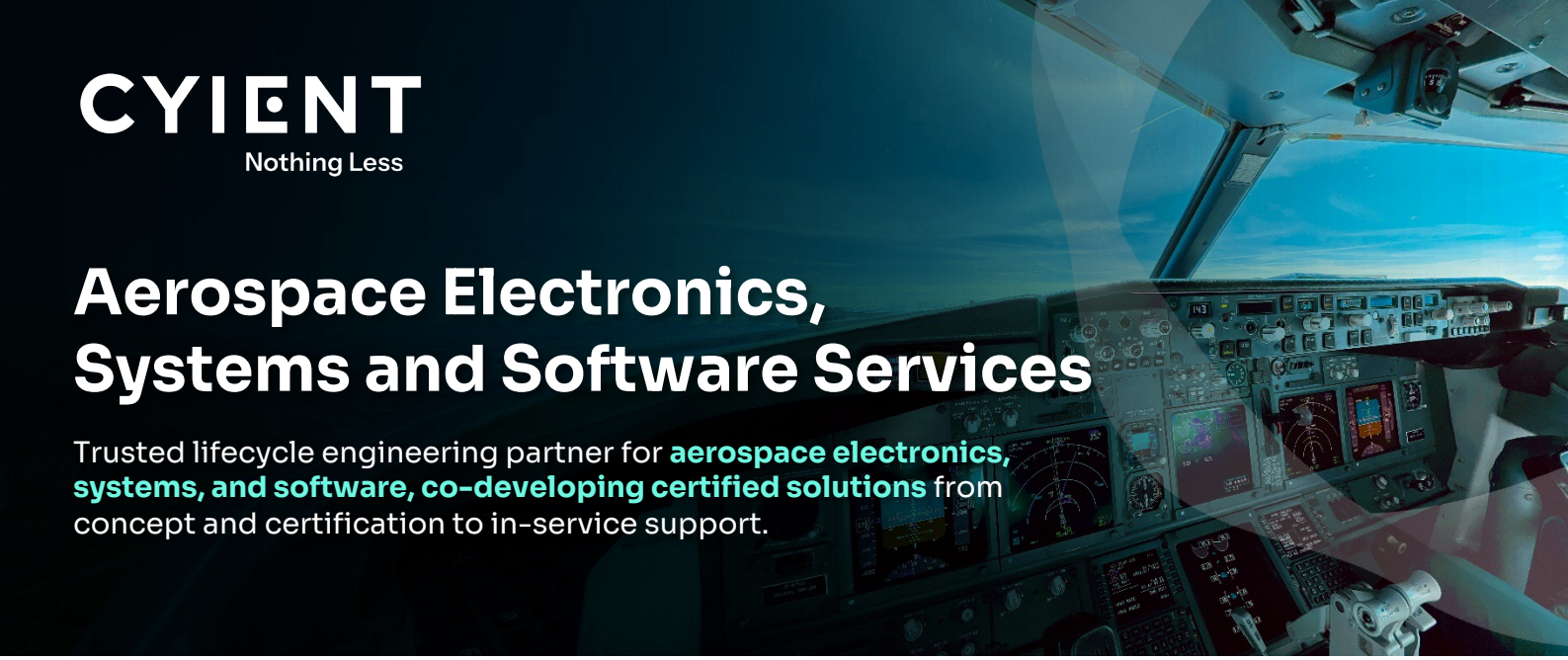
CYIENT
Nothing Less



Aerospace Electronics, Systems and Software Services

Trusted lifecycle engineering partner for **aerospace electronics, systems, and software, co-developing certified solutions** from concept and certification to in-service support.

We partner with global aerospace manufacturers to develop electronics, systems and software solutions. Cyient has 25+ years in aerospace and defence, 3,000+ A&D engineers and 135+ co-owned patents. Our expertise spans system engineering, design and development, prototyping, testing, and independent verification and validation, with cybersecurity built in.

Lifecycle engineering solutions from requirements definition to certification	System certification across DAL A to E: ARP 4754B, DO-178C, DO-254, DO-160G	Obsolescence, upgrade and retrofit services	Digital and AI integration to improve speed to market

Cyient's offering

A full-lifecycle partner for aerospace electronics, systems and software certification, from system engineering and development through independent verification and validation.

Software development
DO-178B/C - All DAL levels

From requirements to final SCI, our DO-178C practice covers the full software life cycle: new development, in-service upgrades, independent V&V, test simulators and ATE. 8.5M+ hours, 500+ engineers, 80+ SOI/SOF audits.

- SDLC from requirements to certification, DAL A-E
- MBSE and system architecture; ARP 4754A / 4761 safety support
- Firmware, BSP, bootloaders, ARINC 653 RTOS, data loaders, applications
- SOI/SOF audit support: FAA, EASA, ANAC, CEMILAC
- Complete artefact suite: PSAC, SVP, SDP, SAS, SCI

Hardware design
DO-254 - DO-160G - ASIC/FPGA

Our hardware team manages the full DO-254 life cycle: concept, simulation, PCB layout, manufacturing liaison and DO-160G qualification. We handle complex programmable devices and legacy component redesign.

- DO-254 hardware life cycle, DAL A-E
- Multicore, GPU and FPGA design; 24-layer PCB; power electronics
- SI/PI, thermal, tolerance and timing analysis; reliability engineering
- DO-160G pre-qualification and qualification; HALT, HASS
- Complete artefact suite: PHAC, HVP, HDP, HAS, HCI

Obsolescence and retrofit
STC - OBS management - Sustenance

We manage electronics obsolescence and retrofit, from component redesign and RTOS migration to Supplement Type Certification, keeping the platform safe, modern and airworthy.

- GPP, ASIC/FPGA, RTOS and memory-interface obsolescence resolution
- RTOS porting to new chipsets with full SDLC artefact regeneration
- Legacy-to-new platform migration with regression verification
- STC support for mandates such as ADS-B Out and FANS 1A
- Product sustenance: defect resolution and in-service support

Technical publications
S1000D - IETMs

Our tech pubs team produces S1000D-compliant documentation for complex software architectures, wiring systems and loading procedures, in traditional and interactive electronic formats.

- Tech pubs per S1000D
- Complex S/W architecture, wiring and signal-flow documentation
- S/W loading, maintenance and fault-isolation procedures
- Interactive Electronic Technical Manuals (IETMs)

Testing infrastructure

Hardware-in-loop - Test benches - Simulators

We design and build bespoke test stations, HIL rigs and interface simulators tailored to your avionics architecture. Diagnostic applications run on desktop or cloud.

- Test station and bench development / upgrades
- MIL-STD-1553B, ARINC 429 and custom interface simulators
- Desktop and on-premises diagnostic and data-loader applications
- Flight and ground test support; system integration
- Cybersecurity test suites meeting DO-326A / ED-202A

Digital engineering

Acceleration through digital and AI solutions

We transform avionics development through intelligent automation, without compromising transparency and traceability rigour.

- Requirements-based IV&V, textual and model-driven, with AI and a human in the loop
- AI-enhanced engineering workflows
- Certification suite checks through AI for faster time-to-cert
- Cyfast-178: in-house test automation suite for FMS and displays

Proven across six avionics domains

Full-lifecycle software and hardware certification on 25+ representative programmes, up to the highest criticality (DAL A).

Display systems

Integrated flight display, synthetic vision, HUD. DAL A-C.

Communication, navigation, surveillance

VHF, HF, GNSS, ACAS, transponder, ADS-B Out, weather radar. DAL B-D.

Electrical power

Bus power control unit and secondary distribution; full SW + HW. DAL A.

Health, maintenance and data load

HMS, OMS, BIT/BITE, ARINC 615, 615A and 665. DAL B-D.

Control and actuation

Engine control, EMCU, cargo door control, landing gear V&V. DAL A-B.

Cabin and IFE&C

Flight attendant panel, cabin video, in-flight entertainment. DAL B-E.

Products designed in-house: NAVCOM (VOR, ILS-LOC, marker, VHF COM, GPS), software-defined radio, HF radio, X-band TRM, AESA antenna, HVDC-DC power supply, transformer rectifier unit, electronic speed controller, liquid motor controller, cargo-door and dimmer control units, ATE.

Marquee certified programs

Flight-deck displays DO-178C | DAL B-D	Cockpit, integrated, secondary and passenger displays and HUD. ARINC 653 partitioning, ARINC 661/429 conformance. Peak 90+ offshore and 10 onsite.
Power distribution (BPCU, SPDP) SW DAL A | HW DAL C	Full LRU design with DO-160 prequalification, FMEA to MIL-STD-1629A, TRL-6. Reduced NRE and recurring cost.
Cabin intercommunication system DO-178C | DAL B-D	12-year software baseline across aircraft families, requirements to field problem-report fixes. Peak 120+ offshore.
Enhanced flight vision migration DO-178C | DAL A-C	Military-to-commercial re-engineering. 20+ engineers ramped in 2 months; LDRA-qualified test automation.
NAVCOM landing system SW and HW DAL B | DO-160G	VOR, ILS-LOC, marker, VHF COM and GPS from concept to certification in 24 months, about 20% below baseline cost.

Dedicated labs

Purpose-built infrastructure accelerates design validation and reduces programme risk across the avionics lifecycle.

Digital lab

3,000 sq ft. Equipment, tools and simulators for high-speed boards (analog, digital, mixed and RF), FPGA, processors and LRU-level test set-up.

Power electronics lab

6,000 sq ft. Development of power products up to 22.5 kVA: DC-DC converters, inverters, distribution boxes, actuation, battery management.

RF and comms lab

6,000 sq ft. Calibrated test equipment and simulation tools for navigation, radar and communication systems up to 26.5 GHz.

Cyient is a global lifecycle engineering services company powering mission-critical industries from design to aftermarket across products, plants, and networks. With 300+ customers and 15,000+ associates across 30+ countries, we combine human expertise, deep domain knowledge, and AI to deliver intelligent engineering for every lifecycle across Aerospace and Rail, Automotive and Mobility, Connectivity, Energy, Healthcare, Mining, Utilities, and beyond.

To learn how we deliver exemplary outcomes, nothing less, visit www.cyient.com

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