



Build and Deploy Mission Critical Systems

Local partnership. Global engineering strength.

Custom software engineering for regulated, safety-critical industries.

WHO WE ARE

IQ Inc. is a Pittsburgh-based software engineering firm that has designed, built, and tested custom software for regulated, engineering-led industries since 1994. In January 2026, IQ joined Critical Software, a global engineering group delivering safety-, mission-, and business-critical systems since 1998.

For our clients, that means a hands-on local partner in Pittsburgh backed by a global engineering group of more than 1,300 people. Our combined experience spans medical devices, railway, aviation, energy, finance, defense, and space.

WHAT WE DO

Software Engineering & Product Development

Web, mobile, embedded, and real-time software from architecture through release.

Quality Assurance, Verification & Validation

Independent V&V, test automation, and hardware-in-the-loop testing.

Cybersecurity

Threat modeling, penetration testing, SBOMs, and secure-by-design engineering across IT, OT, and connected devices.

Cloud, Data & AI

Cloud architecture, DevOps, CI/CD, data analytics, machine learning, and computer vision.

Regulatory & Certification Support

Design controls, traceability, and certification support for FDA, MDR, IEC 62304, CENELEC, and DO-178C.

Consulting, Project Management & Delivery

Project management, staff augmentation, dedicated teams, turnkey delivery, and direct placement.

HOW WE ENGAGE

From individual specialists and dedicated teams to complete turnkey delivery, we scale to each client's needs. We also provide direct placement when you are hiring, and we are available for prime, subcontract, and teaming opportunities.

1994

FOUNDED

2026

JOINED CRITICAL SOFTWARE

1,300+

EMPLOYEES WORLDWIDE

CMMI L5

PROCESS MATURITY

SELECTED CLIENTS

Bausch + Lomb · Medtronic · Dräger ·
UPMC · Midas Healthcare · Omnicell ·
Philips · Alstom · Siemens · Hitachi ·
Airbus · BMW Group · NASA · U.S.
Department of Energy

CERTIFICATIONS & ACCREDITATIONS

QUALITY & PROCESS

CMMI-DEV Level 5 · ISO 9001 · ISO 13485 ·
Six Sigma

SECURITY

ISO 27001 · TISAX · Cyber Essentials Plus

INDUSTRY & GOVERNANCE

EN 9100 · NATO AQAP · Certified B
Corporation · EcoVadis

Held at the Critical Software group level.

NAICS CODES

518210 · 541511 · 541512 · 541519 · 541611 ·
541690 · 541715 · 541990 · 611420

PROUD MEMBERS OF

Pittsburgh Robotics Network · Pittsburgh
Technology Council

Cybersecurity

Secure-by-design engineering, threat modeling, SBOMs, and penetration testing across IT, OT, and connected devices. We recently ran a gray-box penetration test of a cloud-hosted medical imaging (PACS) platform, then helped remediate what we found. Aligned to IEC 62443, IEC 81001-5-1, and the EU Cyber Resilience Act.

AI & Machine Learning

Dependable, explainable AI for diagnostics, predictive maintenance, and decision support, engineered with the traceability that safety-critical and regulated systems require, and aligned to the EU AI Act.

Robotics & Autonomy

Embedded, real-time, and functional-safety engineering for robotic and autonomous systems, built on deep RTOS expertise and active membership in the Pittsburgh Robotics Network.

Aerospace & Defense

Aerospace and defense software has to be certifiable, auditable, and dependable under conditions nobody gets to rehearse. We build and verify avionics and mission systems, support DO-178C and DO-254 certification, and modernize the legacy platforms that critical programs still depend on, across air, land, and sea.

DOMAINS Avionics and cabin systems · mission and command systems · maritime and coastal surveillance · reliability and readiness modeling · legacy platform modernization · next-generation connectivity · certification and qualification support

STANDARDS DO-178C software · DO-254 hardware · DO-278A ground systems · ARP4754A · NATO AQAP 2110 and 2210 · EN 9100 · MIL-STD-1553 · MISRA C

- **Defense reliability and readiness.** Modernized the Department of Defense's legacy risk and reliability analysis tooling into a secure, flexible platform, across a multi-year engagement spanning two programs and two technology generations.
- **Critical FlyTech.** Co-founded an aerospace joint venture with Airbus, developing high-assurance certifiable software across avionics, cabin systems, and next-generation connectivity from a dedicated centre of excellence.
- **Maritime and coastal surveillance.** Built Oversee, a surveillance platform fusing multi-source sensor data with machine learning to anticipate risk, and a repeat winner of Best Technical Innovation at SAR Europe.

TRUSTED BY Airbus · Airbus Defence and Space · Leonardo · Northrop Grumman · Rheinmetall · U.S. Department of Defense

CASE STUDY**AI-Augmented Fighter Pilot Training**

Saab is overhauling simulator training for the Gripen fighter with Project Skynapse, an AI-augmented system developed with Critical Software that personalizes every mission to the individual pilot. Where requalifying on a software upgrade once took six to twelve months, Skynapse can bring a pilot current in a couple of days by automatically tailoring test missions to each aircraft change and each pilot's specific weaknesses.

DOMAINS AI-personalized simulator training · software-upgrade requalification · fighter aircrew readiness

TRUSTED BY Saab (Gripen E/F)

CASE STUDY**Updating Legacy Military Equipment**

An outdated GPS receiver aboard an operational naval frigate was feeding a Combat Management System incorrect location data, a potentially safety-critical fault. With no documentation for the legacy STANAG 4156 link, Critical reverse-engineered the protocol and built an FPGA-based adapter to translate modern NMEA GPS data for the CMS, resolving the positioning errors and enabling easy upgrades going forward.

DOMAINS Naval combat management systems · GPS protocol conversion (NMEA to STANAG 4156) · FPGA-based interface design

TECHNOLOGY Dual NMEA 0183 inputs · STANAG 4156 GPS output · FPGA-based electronics · MIL-C-26482 connectors

ALSO SERVING**Railway**

Embedded, safety-critical rail systems built to CENELEC and SIL 4, with independent V&V and certification support.

Financial Services

Secure, scalable software for payments, fraud and risk, and case management across banking and insurance.

Energy & Industrial

Grid, substation, and industrial control software, plus the data platforms that make operational data useful.

Automotive

Embedded and cloud vehicle software and cybersecurity, engineered at scale through Critical TechWorks, our BMW Group joint venture.

Space

Flight software, independent V&V, and mission platforms for space agencies. NASA was our first customer.

Medical Devices & Life Sciences

Embedded development, independent V&V, cybersecurity, and regulatory engineering for infusion, ventilator, and imaging systems.

Let's build something that lasts.

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