Bernardo Coelho, PhD, CPEng, RPEQ

Principal Systems & Autonomy Leader (Contract / Fractional)

Complex Autonomous Systems | AI-Enabled Platforms | Systems Integration & Governance

Location: Australia (Brisbane) | Remote / Hybrid

Professional Summary

Senior systems and autonomy leader specialising in AI-enabled, software-intensive and complex autonomous systems across robotics, advanced platforms, and safety-critical environments. Operates at Engineering Manager and formally delegated Design Control Authority (DCA) level, supporting organisations with systems integration, governance, V&V strategy, and delivery acceleration of complex technical programs.

Available for contract, fractional (1–2 days/week), and advisory engagements in autonomy, robotics, AI systems, and complex engineering domains (non-defence).

Core Engagement Focus (Contract & Fractional)

- Autonomy systems integration and technical leadership
- AI-enabled system governance and assurance
- Complex systems engineering and lifecycle management
- Verification & Validation (V&V) strategy for autonomous and software-intensive platforms
- Technical due diligence for robotics and deep-tech organisations
- Program recovery, delivery acceleration, and engineering governance

Selected Experience

Project Engineering Manager & Design Control Authority (DCA) – Autonomy Programs

BAE Systems Australia | Brisbane

Led multidisciplinary engineering teams (software, AI/ML, embedded systems, sensors and integration) delivering complex autonomous and AI-enabled platforms across land and air domains within a safety-critical R&D environment.

- Formally delegated Design Control Authority (DCA) on project and Common Autonomy Architecture (EDaD recorded)

- Directed end-to-end systems integration across perception, decision-making, and control pipelines
- Oversaw system safety governance, risk management, and technical assurance activities
- Managed multidisciplinary teams delivering software-intensive autonomous capability in synthetic and field trial environments
- Aligned engineering, program, and executive stakeholders to support milestone delivery and technical decision-making
- Implemented structured engineering governance and Agile delivery practices to accelerate iteration cycles

Autonomous Systems Integration & Technical Leadership

Rheinmetall – Autonomous Systems Programs

Contributed to the integration, adaptation, and delivery of autonomous systems within pre-defined platform architectures, supporting complex operational demonstrations and capability development activities.

- Supported integration of autonomy components within established platform architectures provided by international teams
- Coordinated multidisciplinary collaboration across software, autonomy, and platform integration domains
- Enabled successful demonstrations through structured systems engineering, test planning, and integration activities
- Engaged with technical and operational stakeholders to align system performance with program objectives
- Focused on integration maturity, system performance, and delivery execution rather than core architecture design

Senior Consulting & Engineering Leadership

Engineering Consulting Engagements (Simulation, AI & Complex Systems)

Delivered senior technical advisory across complex engineering programs involving AI-enabled systems, simulation environments, and systems assurance activities.

- Provided senior technical advisory to engineering and program stakeholders
- Supported assurance, integration, and certification-aligned engineering activities
- Led complex systems analysis and integration strategy development
- Acted as trusted technical advisor in software-intensive and safety-critical program environments

Complex Systems & Autonomy Expertise

- Autonomous & AI-Enabled Systems
- Robotics & Software-Intensive Platforms
- Systems Integration & Governance

- Safety-Critical System Delivery
- Verification & Validation (V&V)
- AI Governance & Assurance
- Multidisciplinary Engineering Leadership
- Simulation, Synthetic Testing & Field Trials

Professional Credentials

PhD – Aerospace Engineering (AI / Autonomous Systems)

CPEng – Chartered Professional Engineer

RPEQ – Registered Professional Engineer (Queensland)

BEng – Mechanical Engineering

Engagement Preferences

- Contract (Senior / Principal Level)
- Fractional Advisory (1–2 days per week)
- Technical Advisor / Systems Integration Leadership
- Industries: Mining Autonomy, Robotics, AI Systems, Industrial Technology (Non-Defence)