

Capability Statement

Engineering | Cybersecurity | Systems | Automation

Perth-based consultancy serving industrial and professional services clients across Australia

S5 CONSULTANTS

CAPABILITY STATEMENT

Engineering Rigour. Operational Resilience. Intelligent Automation.

1. Executive Summary & Company Overview

S5 Consultants is an independent Australian engineering, technology, and operations consultancy headquartered in Perth, Western Australia. We deliver high-consequence engineering, technical governance, and digital transformation solutions to asset owners, operators, and tier-one delivery partners across the mining, energy, critical infrastructure, and heavy industrial sectors.

In an operating environment defined by rapid digital convergence, heightened regulatory scrutiny, and complex technical risk, asset owners cannot afford disjointed advice. S5 Consultants bridges the gap between boardroom governance, compliance frameworks, and plant-floor reality. As an agile, senior-led consultancy, our core team brings Tier-1 technical leadership into a focused, owner-ready delivery model. We eliminate administrative bloat, deploying specialist practitioners directly to the critical path of our clients' investments.

Our multidisciplinary practice operates across the full asset lifecycle—from concept definition, detailed front-end engineering, and capital project execution to operational readiness, commissioning, brownfield optimisation, and cybersecurity hardening. By integrating functional safety, industrial control systems (ICS/SCADA), enterprise-grade operational technology (OT) architecture, systems engineering, and advanced machine learning, S5 Consultants ensures critical operations remain safe, secure, compliant, and commercially resilient.

2. Core Service Directory

At a glance, S5 Consultants provides targeted technical capabilities across nine core disciplines:

- * Functional Safety: Lifecycle safety management from hazard identification to SIL verification and compliance auditing under IEC 61508, IEC 61511, and AS 4024.
- * Industrial Cybersecurity: Defensible cyber-physical risk management, zero-trust network design, and regulatory alignment tailored to IEC 62443 and the Security of Critical Infrastructure (SOCI) Act.
- * Governance, Risk & Compliance (GRC): Pragmatic risk governance frameworks that translate technical and statutory obligations into verifiable enterprise controls.
- * OT/IT Architecture: Scalable, secure converged network architectures that bridge industrial networks with enterprise environments in accordance with ISA-95 standards.
- * Systems Engineering: Structured requirements traceability, interface management, and system lifecycle verification based on ISO/IEC/IEEE 15288 principles.
- * Operational Readiness: Execution of structured transition frameworks that bridge project commissioning to reliable, sustained day-one operations.
- * SCADA & Control Systems: High-integrity supervisory control, PLC/DCS design, alarm management, and industrial telemetry engineering for complex process infrastructure.
- * Applied AI & Machine Learning: Industrial-grade data science, edge inference models, and predictive algorithms focused on asset health, anomaly detection, and process optimisation.
- * Business Operations Automation: Robotic process automation (RPA), workflow orchestration, and cross-system data pipeline engineering to remove operational friction.

3. Detailed Practice Areas

Functional Safety Engineering (IEC 61508 / 61511 / AS 4024)

S5 Consultants delivers independent functional safety lifecycle services to de-risk hazardous operating environments. We work directly with technical authorities and project directors to ensure process safety systems are legally defensible and operationally practical.

- * Hazard Studies & Risk Profiling: Facilitation and technical recording of HAZOP, CHAZOP, What-If, and Hazard Identification (HAZID) workshops.
- * SIL Determination & Verification: Layer of Protection Analysis (LOPA), Risk Graph methodologies, target Safety Integrity Level (SIL) allocation, and detailed PFDavg/PFS calculations using industry-standard modelling packages.
- * Safety Requirements Specifications (SRS): Development of comprehensive, vendor-neutral hardware and software SRS documents.
- * Functional Safety Assessments (FSA): Independent Stage 1 through Stage 4 FSA audits, ensuring compliance prior to capital equipment energisation and live introduction of hydrocarbons, reagents, or mechanical power.
- * Machinery Safety (AS 4024): Machine hazard risk assessments, safety circuit design, and validation of performance levels (PL) under ISO 13849.

Industrial Cybersecurity & Critical Infrastructure Protection (IEC 62443 / SOCI Act)

Operational networks demand domain-specific protection strategies that account for real-time latency, deterministic control, and human safety. S5 Consultants designs and executes defensive architectures built for harsh industrial realities.

- * Regulatory Compliance: Gap analysis, uplift roadmaps, and ongoing risk management aligned with the Australian *Security of Critical Infrastructure (SOCI) Act 2018* and relevant CIRMP frameworks.
- * IEC 62443 Implementation: Threat and Risk Assessments (TRA), zone and conduit segregation, security level (SL-T to SL-A) definitions, and cybersecurity management system (CSMS) design.
- * Secure Network Segmentation: Deep inspection firewall architectures, DMZ segregation between Purdue Model Levels 3 and 4, and secure remote access deployments for third-party OEM vendors.
- * Vulnerability & Posture Management: Passive asset discovery, configuration auditing, and continuous threat monitoring integration for industrial control systems.

Governance, Risk, and Compliance (GRC)

Technical governance must produce operational accountability, not just paperwork. S5 Consultants creates audit-ready compliance ecosystems that give executive boards confidence in their physical and digital operations.

- * Statutory engineering compliance reviews and design-safety management frameworks.
- * Enterprise Risk Management (ERM) system alignment with operational hazard registers.
- * Development of technical standards, specifications, and design guidelines for asset owners.
- * Incident investigation, technical root cause analysis (RCA), and remediation program management.

OT/IT Converged Enterprise Architecture

Modern industrial productivity relies on safe data exchange between process controllers and enterprise systems. S5 Consultants engineers robust, low-latency, and hardened enterprise OT backbones.

- * ISA-95 Architecture Design: Clean boundary delineation and data flow modeling from Level 0 (process) to Level 4/5 (business ERP/cloud).
- * Industrial Edge & Telemetry: Design of high-reliability communications across private LTE/5G, industrial Ethernet, optical fibre, and long-range point-to-multipoint telemetry.
- * Enterprise Data Integration: Secure industrial historian deployment, MQTT/OPC-UA data pipelines, and unified operational data layers for enterprise-wide visibility.

Complex Systems Engineering (ISO/IEC/IEEE 15288)

As capital projects grow in complexity, integration failures become the primary driver of schedule delays and budget blowouts. S5 Consultants applies disciplined systems engineering to preserve scope integrity.

- * Requirements Engineering: End-to-end capture, derivation, and verification tracking across multi-package technical scopes.

- * Interface Management: Active management of complex commercial, technical, and battery-limit interfaces between EPCs, OEMs, and sub-contractors.

- * V&V Frameworks: Comprehensive Verification and Validation strategies, test matrices, and commissioning acceptance gates.

Operational Readiness & Commissioning (OR&C)

The handover from construction to operations is a critical phase for asset value. S5 Consultants embeds structured readiness frameworks into owner's teams to secure ramp-up targets.

- * Development of Operational Readiness Plans across People, Plant, and Process workstreams.
- * Asset information handover management: tagging verification, digital twin alignment, and CMMS asset master data build-outs (e.g., SAP PM, Maximo).
- * Factory Acceptance Testing (FAT), Site Acceptance Testing (SAT), and cold/hot commissioning oversight.
- * Standard Operating Procedures (SOPs), maintenance strategy authoring, and operational baseline documentation.

SCADA & Industrial Control Systems (ICS)

We engineer resilient, deterministic, and intuitive human-machine interfaces (HMI) and supervisory control platforms.

- * Vendor-independent design across leading PLC/DCS/SCADA platforms (Rockwell, Schneider, Siemens, Yokogawa, Citect, Ignition).
- * Alarm Management rationalisation aligned with ISA 18.2 / IEC 62682 to prevent operator cognitive overload.
- * Modernisation of legacy control infrastructure: hot-cutover planning, obsolete controller migrations, and phased control-loop enhancements.

Applied Artificial Intelligence, Machine Learning & Automation

S5 Consultants cuts through industry hype to deploy practical, return-on-investment-driven AI/ML models designed for high-consequence asset operations.

- * Predictive Maintenance (PdM): Machine learning models trained on vibration, temperature, acoustic, and electrical signatures to predict equipment degradation before failure occurs.
- * Process Optimisation: Industrial analytics for advanced process control (APC), dynamic setpoint tuning, and energy efficiency modelling.
- * Computer Vision: Industrial edge-vision models for automated safety exclusion-zone monitoring, conveyor monitoring, and defect identification.
- * Business Operations Automation: Automation of repetitive cross-system data entry, regulatory reporting generation, work order routing, and vendor invoice reconciliation using modern RPA and API pipelines.

4. Industries Served

S5 Consultants works with asset-intensive industries where safety, reliability, and continuous uptime are critical:

- * Mining & Mineral Processing: Iron ore, critical minerals (lithium, nickel, rare earths), gold, and base metals. Process plants, autonomous haulage networks, stockyards, and automated train loading infrastructure.
- * Energy, Utilities & Microgrids: Power generation, high-voltage transmission/distribution substations, remote hybrid microgrids, battery energy storage systems (BESS), and renewable assets.
- * Hydrocarbons & Chemicals: Upstream extraction, gas compression, LNG processing facilities, downstream chemical manufacturing, and fuel storage terminals.
- * Water & Wastewater Infrastructure: Desalination facilities, regional water treatment plants, pumping networks, and automated distribution infrastructure.
- * Heavy Transport & Logistics: Automated bulk materials ports, rail signalling networks, conveyor systems, and intermodal freight hubs.

5. Why S5 Consultants?

1. Senior-Led Execution, Zero Overhead

At S5 Consultants, your project is led and delivered by seasoned industry professionals. We do not field sales teams who hand your scope to graduate recruits. Our clients receive direct, hands-on attention from principal engineers who have held field-level and operational authority on major infrastructure projects.

2. Cross-Discipline Convergence

True technical problems rarely fit within a single engineering silo. A functional safety loop depends on reliable network architecture; industrial cybersecurity directly affects safety availability; operational readiness relies on clean systems engineering. S5 Consultants natively integrates these disciplines, closing the gaps where interface risks occur.

3. True Owner's Alignment

We operate as an extension of the asset owner's technical leadership. Because we maintain complete vendor independence, our advice is objective, commercially transparent, and focused purely on minimizing total cost of ownership (TCO) and operational risk for our clients.

4. Pragmatic, Not Academic

We build systems designed to operate safely in real-world environments like the Pilbara heat or remote desert substations. Our deliverables are clear, executable technical packages that operations teams can maintain long after our team departs.

6. Corporate Details & Engagement Models

S5 Consultants offers flexible engagement structures tailored to project maturity and operational requirements:

- * Specialist Advisory & Technical Authority Retainers: Direct, on-call access to principal engineers for design reviews, safety reviews, and independent technical opinions.
- * Turnkey Technical Work Packages: Fixed-scope deliverables such as LOPA studies, cybersecurity risk assessments, SCADA designs, and operational readiness plans.
- * Embedded Owner's Team Support: Integration of our specialists into owner's engineering teams to manage technical packages and oversee contractor delivery.

Contact Information

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