



DEFENCE

**The best thinking in
Defence**



SAGE Group and Defence

A global company with a team of more than 500 people across two continents, SAGE combines the best thinking with world-leading technology.

The SAGE Group of companies includes SAGE Automation, Nukon, Skills Lab and Embedded Expertise. Each SAGE company has their own area of expertise, from capacity building, strategy and design to cutting-edge technological and digital solutions.

By supporting our clients to innovate, modernise, digitise and improve how they do things, we deliver significant gains across efficiency, safety, cost savings, quality and performance.

SAGE is privately owned and vendor agnostic, which gives us the freedom to invest, innovate and approach every challenge for our clients without constraints.

Our national presence across Australia ensures delivery and on-going support is always within reach for our clients, no matter where they are.



Our work

Our industry experience and knowledge extend across many major defence companies, a reflection of our commitment to and participation in the sector.

SAGE's innovative approaches to various sectors ensures that our learnings from other sectors can be integrated into our defence project approach and delivery (while respecting our client's IP) to drive smarter performance.

To exceed the industry's rigorous demands, SAGE provide, and will continue to provide, trustworthy, secure solutions to support defence companies and supply chains.

SAGE Defence

Starting in 2009, SAGE Defence began with the signing of a Memorandum of Understanding with Navantia and has grown to become a significant sector within the business, with a track record of exceptional on-time and within budget delivery.

Across the SAGE Group of companies, we have proven to be a trusted partner in this sector, working alongside some of the biggest names in the defence industry.

Working extensively with tier 1 and tier 2 defence contractors, we can help you to fulfil Australian industry content requirements.

Resource pool



192 ENGINEERS



40 PROJECT MANAGERS



85 SERVICE TECHNICIANS



14 SITE SUPERVISORS



40 PANEL MANUFACTURERS



102 TECHNICAL AND SUPPORT PERSONNEL

What we do

Material and sustainment

SAGE Defence focuses on the delivery of fit-for-purpose electrical and control systems for the Army, Navy and Air Force.

We are an independent system integrator of electrical control systems, including commercial off-the-shelf (COTS) systems.

From small stand-alone electrical control systems through to highly complex integrated solutions, SAGE Defence has the flexibility and scalability to deliver on time.

Our team can design a solution tailored specifically to your requirements, using our tried and tested approach.

Design

SAGE Defence has proven capability in designing solutions to suit the specific requirements of our clients. Striving to provide the best solution possible, we are not afraid to question requirements if we believe there is a better option.

We believe collaboration is key and we work closely with you to provide the best fit-for-purpose outcome. SAGE solutions are designed to be maintainable, with detailed documentation kept throughout the project.

These rigorous documentation processes ensure you will have complete confidence in fulfilling any compliance needs.

Source and deliver

We source the most appropriate components for your project and ensure the solution does what was promised.

With more than 20 years' experience and robust supply chains, SAGE Defence will source the world knowledgeably and acquire the most suitable components for your solution, especially as we are truly vendor independent.

Through-life-support

Delivering end-to-end support for the entire lifecycle of Defence assets, SAGE can add value through our Through Life Support (TLS) capabilities. We travel wherever necessary to deliver TLS, from fault-finding and repairs to onboard upgrades.

Our TLS capability includes:

- URDEF works
- Warranty works
- Minor Capex works
- Preventative maintenance
- Compliance sign-off works
- Subsystem support works
- IPMS support works
- Platform training support.



What we do

Estate and infrastructure

Ensuring the safe and efficient running of Defence assets, SAGE understand the need for reliability and strong performance.

Our national team bring a wealth of experience to the defence estate and infrastructure sector.

We have proven results in a wide breadth of infrastructure projects including airfield lighting, standby power generation, fuel delivery, water treatments plants and PFAS treatment plants.

You benefit from scalable resources and the sector diversity that SAGE can bring to all estate and infrastructure works.

Collectively, our people hold an extraordinary depth of expertise, from design through to commissioning.

Infrastructure works

Ensure the success of your project with SAGE's comprehensive infrastructure works, including:

- Detailed electrical design and power studies
- LV and HV reticulation
- PLC and SCADA programming
- Hazardous area design, functional safety
- Site installation and instrumentation commissioning.

Upskilling and training

SAGE Group company, Skills Lab, can assist with the upskilling of operators within the Defence industry through a range of accredited and non-accredited training programs.

Service delivery

SAGE was built around a collaborative approach to providing our clients with ongoing support, peace of mind and outstanding asset performance.

For the Defence sector, this includes:

- Predictive maintenance
- Instrumentation services
- 24/7 breakdown and remote support
- Critical function testing
- Hazardous area inspections.

With SAGE, you are partnering with a company that can lead you into the future.



Industrial control panel manufacturing

SAGE Automation is a trusted adviser to the defence manufacturing sector, and our automation solutions have helped countless manufacturing businesses to reduce production costs, increase product quality and consistency, and improve operational safety.



Why SAGE Manufacturing?

With more than 20 years' experience across the manufacturing sector, we have the expertise needed to maintain high-quality outputs demanded of the defence industry. Our Australian-based manufacturing centre has heavily invested in Industry 4.0 initiatives to deliver quality, repeatability and throughput for our clients.

At SAGE, we do more than just build to your supplied drawings. We provide recommendations on build improvements, increasing quality and saving time. Draw on our high level of expertise to identify errors, and ensure any changes made will meet your requirements.

In 2020, we were recognised as the Defence Manufacturer of the Year at the Australian Defence Industry Awards.

OUR DIFFERENCE

Industry 4.0 initiatives

SAGE work cell tools, CNC machine and automated cut-to-length, strip and crimp machine ensures consistent quality terminations of our cabling.

Investments in our Industry 4.0 capability have enabled us to integrate digital twin technologies for easier customer sign-off and streamlined production workflows.

Certifications

Our panel technicians and apprentices are certified in IPC/WHMA-A-620A Requirements and Acceptance for Cable and Wire Harness Assemblies, a requirement for control system work in the Defence industry.

Transparency in processes

Initial internal meetings are held to review drawings, build materials and standards.

Progress reports and photos are provided to the customer, and we keep as-built records of each panel we build, including photos and scanned drawings for traceability. This ensures quick, accurate turnaround times for replica builds.

Comprehensive testing

Detailed Factory Acceptance Testing (FAT) is carried out as standard prior to shipping and installation.

This confirms a panel's functional operation before onsite installation and minimises the commissioning and testing time. It also provides our customers with an excellent opportunity to assess the functionality of the detailed test documentation.



Low voltage switchboards

SAGE is one of a few manufacturers providing solutions to meet all requirements for custom-built and type-tested modular switchboard systems.

Draw on our proven experience

We specialise in the design and manufacture of all types of electrical switchgear and control-gear assemblies, modular or fabricated:

- Main switchboards
- Motor control centres
- Distribution boards
- Pump control boards
- Mechanical services switchboards
- Automation and control panels, and
- Power factor correction systems.

Fabricated enclosures can be produced in sheet steel, aluminum or stainless steel.

SAGE LV Manufacturing is a licensed assembler of Tabula, Cubic, ABB Pro E, Rittal Ri4 Power and B&R Signature modular switchboard assemblies.

We pride ourselves on the quality of our work and getting it right the first time. You can rest assured of the delivery of switchboard systems with maximum safety and functionality, within cost limits.

Certifications

SAGE Automation carries out its electrical installation work in accordance with Australian Standard AS/NZS 3000 - Electrical Installations (Wiring Rules).

All electrical panels are built in accordance with AS/NZS 61439 - Low-voltage switchgear and controlgear assemblies standards.

All work is underpinned by SAGE Automation's Integrated Management System which is certified to ISO 9001 (Quality), ISO 14001 (Environment) and AS/NZS 4801 (Health and Safety) standards.





SAGE Defence has a proven track record in supporting global defence companies delivering projects and services.

Our work in the Defence industry

With more than a decade of defence experience, we are a trusted partner who has worked alongside some of the biggest names in the industry.

Clients include:

BAE Systems	Spotless
Thales	Ventia
ASC	Brookfield
Navantia	Sitzler
Saab Australia	McMahon
Ultra Electronics	PACM
NSM	Lend Lease
Tiwi Partners	Laing O'Rourke
Intract	Fulton Hogan
Augility	Avionics Limited
Aurecon	ADB Safegate

Case studies

MANUFACTURE OF MODULAR SWITCHBOARDS, BAE SYSTEMS AUSTRALIA

SAGE collaborated with sub-contractors and our client, BAE Systems Australia, to design, manufacture and commission cubic modular switchboards for four Royal Australian Navy (RAN) Paluma-class vessels.

Works included the design and manufacture of main switchboards and engine control, factory acceptance testing (FAT), Performance Monitoring System upgrades, onboard commissioning support.



TRAINING CONSOLE MANUFACTURE, SAAB AUSTRALIA

SAGE Automation's manufacturing facility in Tonsley recently completed a major project for Saab Australia, assembling more than 50 training consoles that will be used by the Royal Australian Navy.

Works included the manufacture of internal cabling assemblies, project collaboration, manufacturing to scale, factory acceptance testing.



COLLINS CLASS CHILLED WATER PLC REPLACEMENT, ASC

SAGE Automation specialist engineers worked with ASC to replace the PLC for the Chilled Water System, onboard six operational submarines.

Work included the integration of new equipment into existing field cabling and devices, electrical and functional design specifications and stringent functional testing.



Case studies

FUEL FARM UPGRADE, DARWIN RAAF BASE

SAGE was engaged to deliver a complex control system upgrade for Darwin RAAF base's fuel system, the infrastructure that stores and pumps millions of litres of aviation fuel.

SAGE delivered SCADA system design, manufacture of electrical panels, operator training, installation and commissioning.

SAGE Group company, Skills Lab, developed RAAF operator training on the new fuel systems, including an online training portal that can be used by new operators to learn the system.



AIRFIELD LIGHTING UPGRADE, RAAF

SAGE Automation has helped to light the way home for pilots in the Royal Australian Air Force, by upgrading the runway lighting systems across key airfields around Australia.

The works included augmentation of the existing supply/control system located within the existing Airfield Lighting Equipment Room (ALER Centre), PLC and SCADA programming, creation of operations and maintenance documentation, and commissioning.

SUBSTATION AUTOMATION FOR DEFENCE SOLAR FARMS

SAGE was contracted to augment the defence HV networks and control systems to support two solar farms for defence sites in the Northern Territory.

Works included the installation of new HV switchboards for PV connections, installation and commissioning of a new site-wide fibre optic network and modification of existing SCADA systems.



Project experience

A snapshot of projects that SAGE Defence have undertaken:

- **ASC** Collins Class, Chilled Water PLC replacement
- **ASC** Collins Class, Cool/cold room control system upgrade
- **ASC** Collins Class, ISCMMS stay safe control system upgrade
- **BAE Systems Australia** Paluma Class PMS upgrade
- **BAE Systems Australia** HMAS Paluma PMS control system upgrade
- **BAE Systems Australia** LHD, communication enclosures
- **BAE Systems Australia** LHD, Zone 8 set to work & commissioning support for the Integrated Platform Management System (IPMS)
- **BAE Systems Australia** Wedgetail, ground support power distribution system
- **Chemring** Managing contractor, automated Countermeasure Manufacturing Plant
- **Cold Logic** HMAS Choules chiller upgrade
- **Daronmont Technologies** Mechanical / electrical fit out of portable Mobile Control and Reporting Centres (MCRC)
- **HMAS Sirius** Sewage treatment plant control upgrade
- **Intract** RAAF Darwin & Robertson Barracks PV solar HV augmentation
- **Navantia** AOR IPMS control panel build
- **Navantia** AWD, IPMS control panels construction and simulator installation / integration
- **Navantia** LHD, set to work and commissioning support for the IPMS
- **RAAF** Airfield lighting systems for 10 airbases
- **RAN** PLC training delivered specific to Hobart Class Air Warfare Destroyers
- **Saab Australia** Manufacture of training consoles
- **Saab Australia** Manufacture of server racks
- **Saab Australia** Manufacture of modular multi-function consoles
- **Thales** Mulwala high explosive facility control upgrade
- **Tiwi Partners** RAAF Darwin fuel SCADA controls upgrade
- **Ultra Electronics** AWD, control panels for the integrated Sonar System
- **Ultra Electronics** Power Distribution Unit (PDU)

Working with SAGE

SAGE Group is comprised of specialist business units who combine their expertise to support the defence industry to lead into the future.

SAGE Automation

Australia's largest industrial automation and control system integrator, with end-to-end project delivery, advanced manufacturing and 24/7 breakdown and service support.



Nukon

An Internet of Things (IoT) and digital transformation consultancy and delivery specialist. Nukon combines strategy, analysis and best-of-breed technology to provide improved visibility of operations and industrial processes.



Skills Lab

Creating a workforce that thinks smarter, Skills Lab offers industry-derived training for individuals and defence organisations. Upskill your workforce through accredited and non-accredited Industry 4.0 courses in automation, instrumentation, PLC and SCADA.



Embedded Expertise

Embedded Expertise provide advanced solutions for hiring industry specialists, with a unique approach to sourcing and selecting talent. Embedded makes it easy to access high-calibre technical engineering expertise for your project to succeed.





CONTACT US

**We'd love to hear
from you.**



ADAM KIRYK
HEAD OF DEFENCE

t +61 (0) 400 900 674

@ Adam.Kiryk@gotoSAGE.com

w www.gotoSAGE.com

**SAGE is a proven, trusted and reliable
Defence sub-contractor.**