



Australian Government
Department of Employment
and Workplace Relations

Exploring Careers: Strengthening Australia's Defence and Maritime Industries Workforce

WEBINAR

28 FEBRUARY 2024

WELCOME

We begin by acknowledging the Traditional Custodians of the various lands on which we all work today, and the Aboriginal and Torres Strait Islander people participating in this webinar. We pay respects to Elders past, present and emerging.



BAE SYSTEMS



AGENDA

01 **Tim Dore**
Director Member Services
Defence Teaming Centre

02 **Ashleigh Bryans**
Program Lead – Early Careers
BAE Systems Australia

03 **Fred Hull**
Aerospace and Defence Manager
Axiom Precision Manufacturing



Exploring Careers: Strengthening Australia's Defence and Maritime Industries Workforce



Defence Teaming Centre
Connecting • Developing • Advocating

Presenter: Tim Dore, Director of Member Services, Defence Teaming Center Ltd

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Defence Industry – What Is It?

The end users



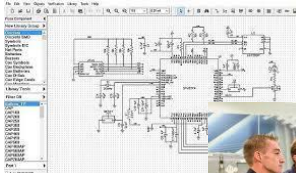
Primes



Mediums



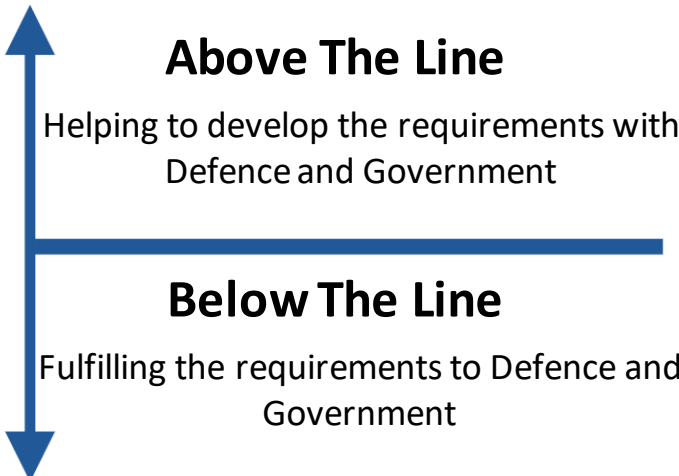
Design
Complex manufacturing
System development
System integration
Service provisions



Small



- Engineering support
- Low-volume manufacturing
- Service provision
- Above the line consultancy
- Component repair
- Modification incorporation



Where in Australia can I work?



Western Australia

The Australian Marine Complex (AMC) in Henderson, WA is the base for a strong shipbuilding industry in Australia.



South Australia

A key location for Defence Industries, the Osborne Shipyard in South Australia is a hub for naval shipbuilding.



Northern Territory

The Northern Territory's geographic location and climatic conditions are seeing it emerge as a growing centre for the Australian space sector.



Queensland

Queensland is known for combat reconnaissance vehicles, advanced aerospace manufacturing and maintenance, including new sectors like space industries, unmanned aerial systems, and hypersonics.



New South Wales

Global defence companies such as Lockheed Martin, Northrop Grumman and BAE Systems base some of their key regional operations in NSW.



Australian Capital Territory

Canberra is home to the largest concentration of defence and national security agencies, assets and organisations in Australia such as CEA, DataPod and EOS.



Victoria

Victoria hosts the largest cyber security cluster in Australia, including the Oceania Cyber Security Centre and the CSIRO's DATA61 Cyber Security and Innovation Hub.



Tasmania

Home of the Defence Innovation Precinct, offering unique maritime facilities and expertise in defence science and research.



What is Defence Industry Looking For?

Engineering, Technical & Project management:

Engineers, Drafter, Technical Writer, Electronics Technician, Engineering Manager, Facilities Manager, ILS Analyst, Maintenance Manager, Maintenance Planner / Analyst, Marine Technician, Naval Architect, Program Manager, Project Planner / Scheduler.

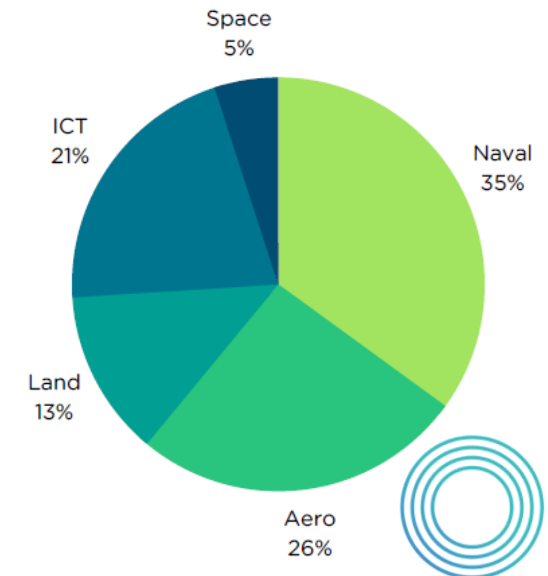
Sales Project Support & Logistics:

Account Manager, Bid Manager, Business Development Manager, Commercial Manager, Cost Schedule Analyst, Document Controller, Logistics / Supply Chain Managers and Specialists, Operations Manager, Procurement / Purchasing Manager and Specialists.

Information and Communications Technology:

Security / Data), Business Analyst, Data Engineer/Analyst, Help Desk / Desktop Support, IT Security Consultant (Cyber / IT / InfoSec), Network Administrators and Engineers, Program Manager, Project Support, Security Analyst, Security Engineer, Service Delivery Manager, Software Engineers and Testers, Systems Administrators and Engineers

The Naval and Cyber Domains are expected to have the highest increase in new jobs over the next 12 months.



AUKUS Pillar I & II

PATHWAY TO AUSTRALIA'S NUCLEAR-POWERED SUBMARINE CAPABILITY

Embeds and Industrial Workforce
(From 2023)

Increasing Port
Visits (From 2023)

SRF-West
(As early as 2027)



Australia Sovereign
Ready (Early 2030s)

Australian Virginia
Class Submarines



Australian
Shipyard Design
and Construction
(From 2023)

Construction of SSN-AUKUS
(During the 2020s)

Planned Delivery of
UK's First SSN-AUKUS
(Late 2030s)

Planned Delivery of
Australia's First
SSN-AUKUS
(In early 2040s)



Collins Class Capability



2023

2033

2043

2053

Stewardship Pathway



The AUKUS alliance between Australia, the US and UK will advance Australia's military technology.

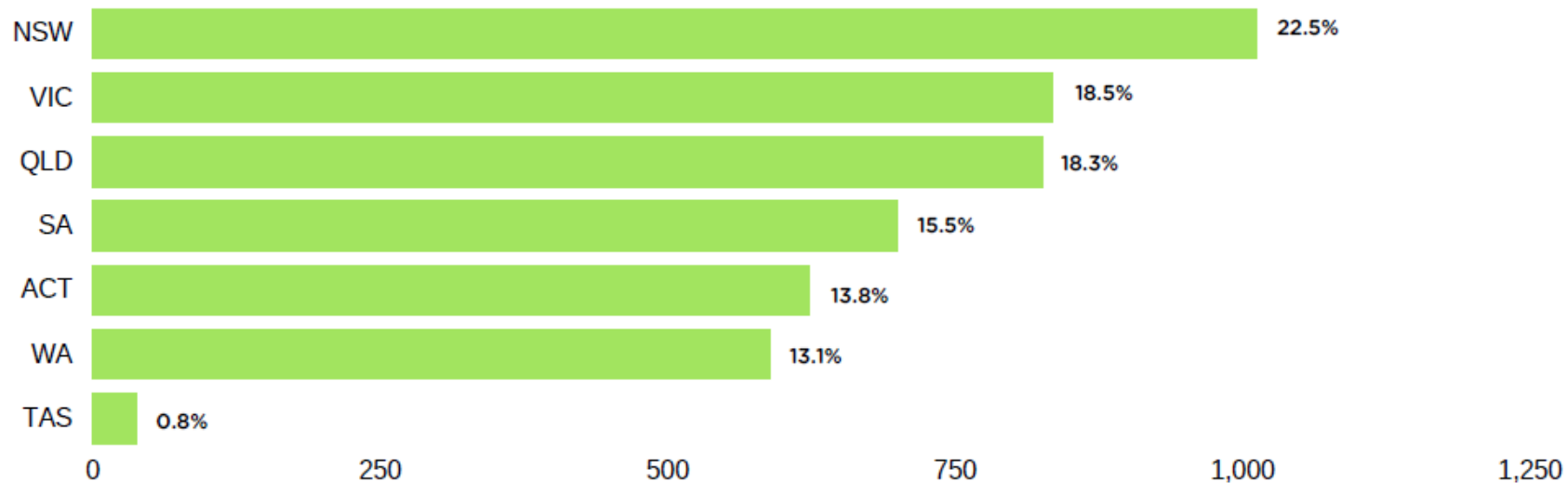
Pillar II of the treaty will enhance our capability in:

- Cyber
- AI
- Quantum technologies
- Hypersonic and counter-hypersonic
- EW



How many are needed?








It is expected that the defence industry is expected to hire around 4500 workers in the next 12 months.



Distribution of expected hiring by state



Programs to train

| | |
|---|---|
|  <p>Queensland Government</p> | <ul style="list-style-type: none"> • Defence and Aerospace Industry Development Fund - The fund provides targeted financial assistance to eligible small and medium enterprises (SMEs) operating in the defence, aerospace or space sectors. • Employer incentives and subsidies for apprenticeships and traineeships. Business Queensland. |
|  <p>NSW GOVERNMENT</p> | <ul style="list-style-type: none"> • Funding for vocational education and training – Access funding for vocational education and training that provides workplace skills in high-demand industries. NSW Education and Training |
|  <p>VICTORIA State Government</p> | <ul style="list-style-type: none"> • Victorian and Skills Gateway - Find out what you'll have to pay, and if you can get any assistance with your fees. Victorian Skills Gateway. |
|  <p>SOUTH AUSTRALIA</p> | <ul style="list-style-type: none"> • South Australian Defence Industry Workforce and Skills – The program has established 22 initiatives to improve the learning journey from primary and secondary school to universities, VET and mid-career retraining. Opportunities exist for free TAFE, cadetships and apprenticeships for Women in STEM and government-supported university positions. SA Defence Industry Workforce & Skills. |
|  <p>THE GOVERNMENT OF WESTERN AUSTRALIA</p> | <ul style="list-style-type: none"> • Jobs & Skills WA Skills Ready program – Free and ½ priced training programs for 13 industries that include Defence, Aerospace, Maritime and Logistics. Skills Ready WA. |
|  <p>NORTHERN TERRITORY GOVERNMENT</p> | <ul style="list-style-type: none"> • Workforce Territory - Building a capable and skilled workforce for the Territory. Grants and training incentives across a range of industries and courses. Workforce Territory |
|  <p>Tasmanian Government</p> | <ul style="list-style-type: none"> • Skills Tasmania - offers a range of funding programs for delivery of nationally recognised training. Information is provided to help you understand what training is available and which qualifications are currently subsidised. Skills Tasmania. |



Beyond the Pathways

**Concept
Designer
Manufacturer
Test &
Evaluation
Installer
Operator
Maintainer
Support &
Logistics**



Aeronautical, Mechanical, Electrical, Design, Structural, Propulsion Engineers, Sheet-metal, avionics, engine and airframe fitters, Electricians, Maintenance Planners, Milling Machine Operators, Welders, Logistics, Composites



Thank you

Connect with us on



Defence Teaming Centre

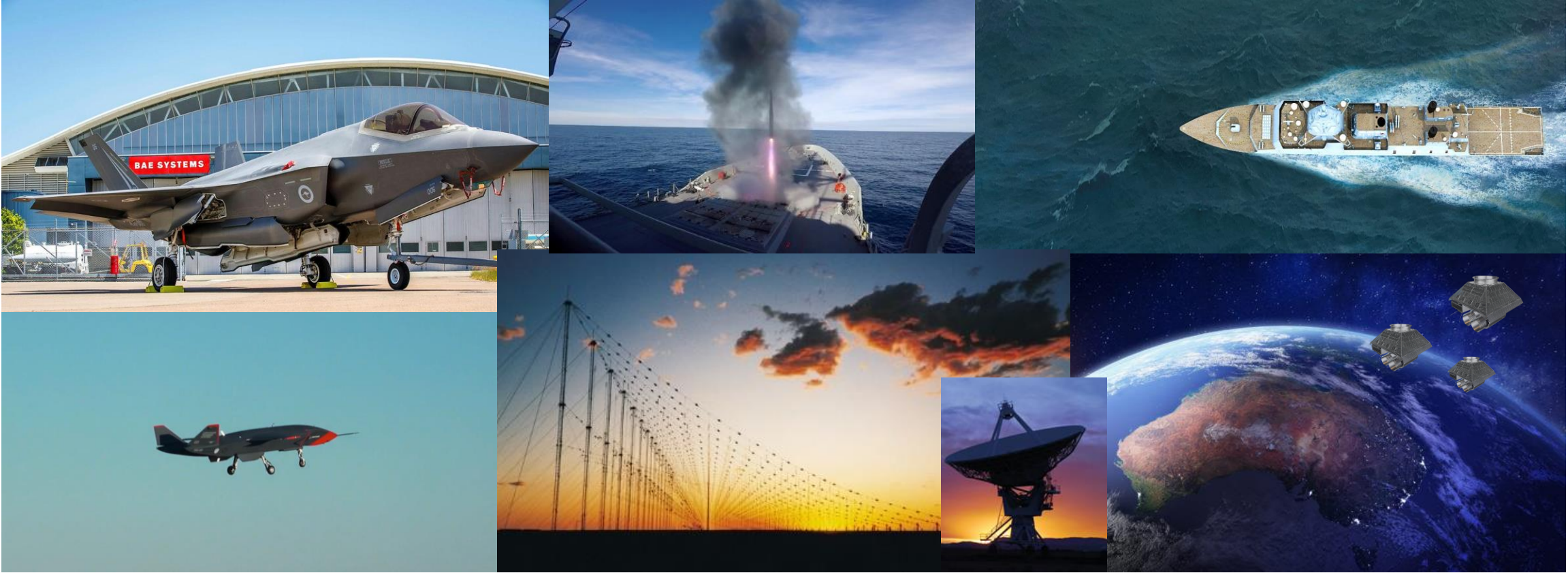
Connecting • Developing • Advocating

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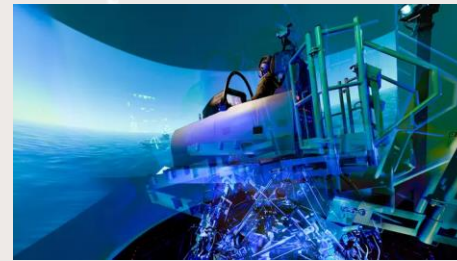
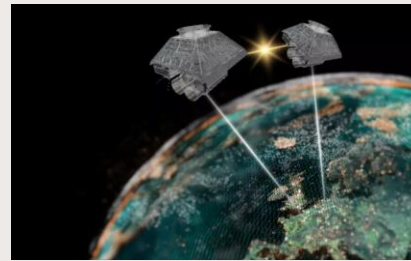
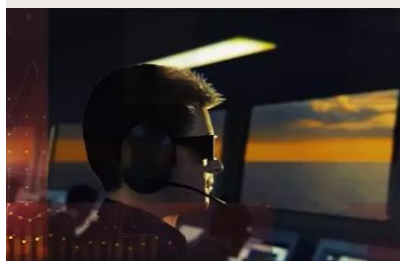
Our values
Trusted | Innovative | Bold

- BAE Systems is one of the largest defence and aerospace companies in the world.
- We operate across 40 different countries including in the US, UK, Saudi Arabia and Australia
- Globally, BAE Systems employs 90k people!
- The company has a pipeline of about \$53bn worth of projects that we are delivering.
- We value people who are trusted, innovative and bold

40+
Countries

90,500
Employees

52.7Bn
Order backlog



BAE Systems Australia

Who are we?

BAE Systems Australia works with the Australian Defence Force to provide the tools and equipment to keep our country safe. From air to shipbuilding, we provide defence with technology to protect both people and national security



Sea



Air



Land



Cyber
Security

Almost

70 years

of strategic support to the ADF.
Working across all domains.

BAE Systems Australia

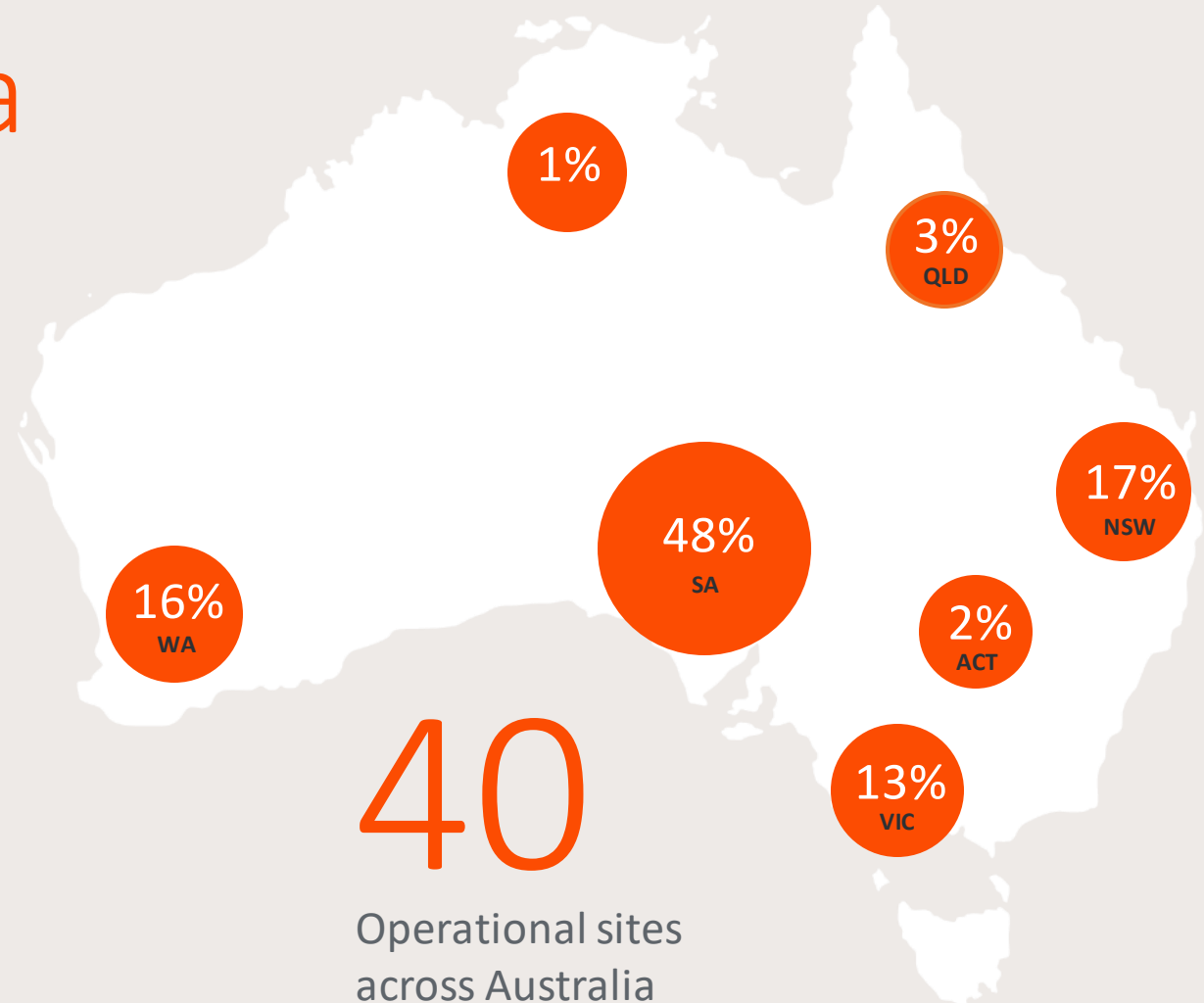
Our workforce

Skilled workforce of over

5500

With nearly 5500 people working across 40 sites across the country, our defence solutions produce some of the world's most advanced technologies.

To deliver this, we employ and work some of the most skilled people in Australia to work with unique systems and solutions to solve complex problems.



40

Operational sites across Australia

BAE Systems Australia

What we do



Air



Sea



Cyber Security



Research & Development

BAE Systems Australia is a leading provider of military air capabilities and products.

- Aircraft design
- Aircraft manufacturing
- Aircraft sustainment – maintenance/repair/upgrade
- Training (we use VR/AR to train fighter pilots)

We design, build, integrate and support maritime platforms and naval weapon systems.

- Building ships (digitally and physically!)
- Hunter Class Frigates
- Ship sustainment/sea asset management
- Anti-ship missiles
- Navigation systems

Radar surveillance & electronic warfare

- Radar called JORN - a radar that can see objects in the sky.
- Electronic warfare
- Space technologies – cameras in space!

Red Ochre LABS is BAE Systems Australia’s Research and Development hub where we get to develop technology in:

- Autonomy (self-driving/navigating planes and ground vehicles!)
- Hypersonic research
- Space research for sensors in space
- Modelling and simulation

Engineers build
bridges, right?



Engineers are problem solvers...

“Engineers are problem solvers... and we have many problems yet to solve!”



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What does an engineer actually do?

They lead **space missions** 🧐🚀

They are the brains behind your **makeup** 💄, your **headphones** 🎧 and your **fit bit** 🏃

They are behind your **smart phone** 📱 and **Instagram** 📷

They created the **shampoo** 🧴 you used this morning

They designed your **car** 🚗

They created **pacemaker** ❤️, your **hearing aids** 🎧

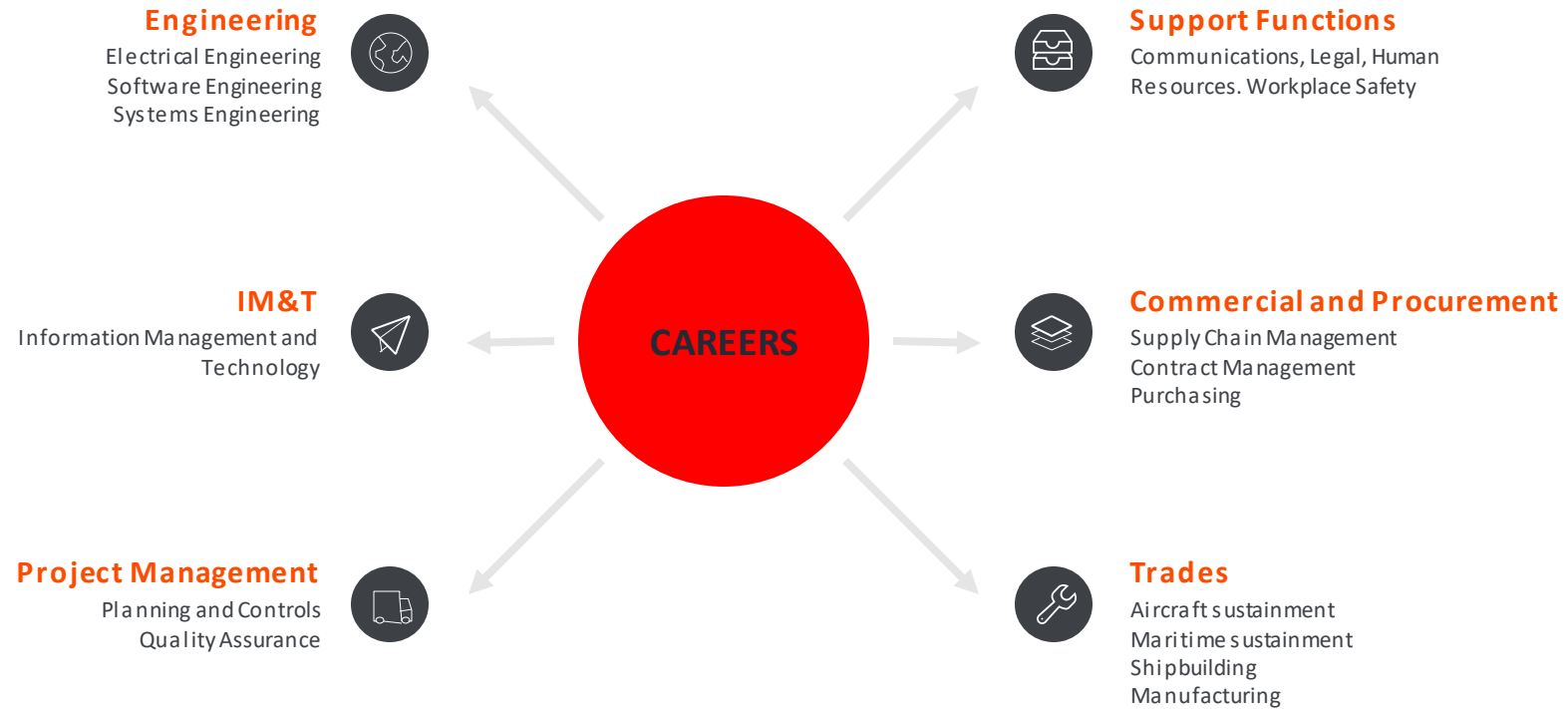


What skills should I have for a successful career?

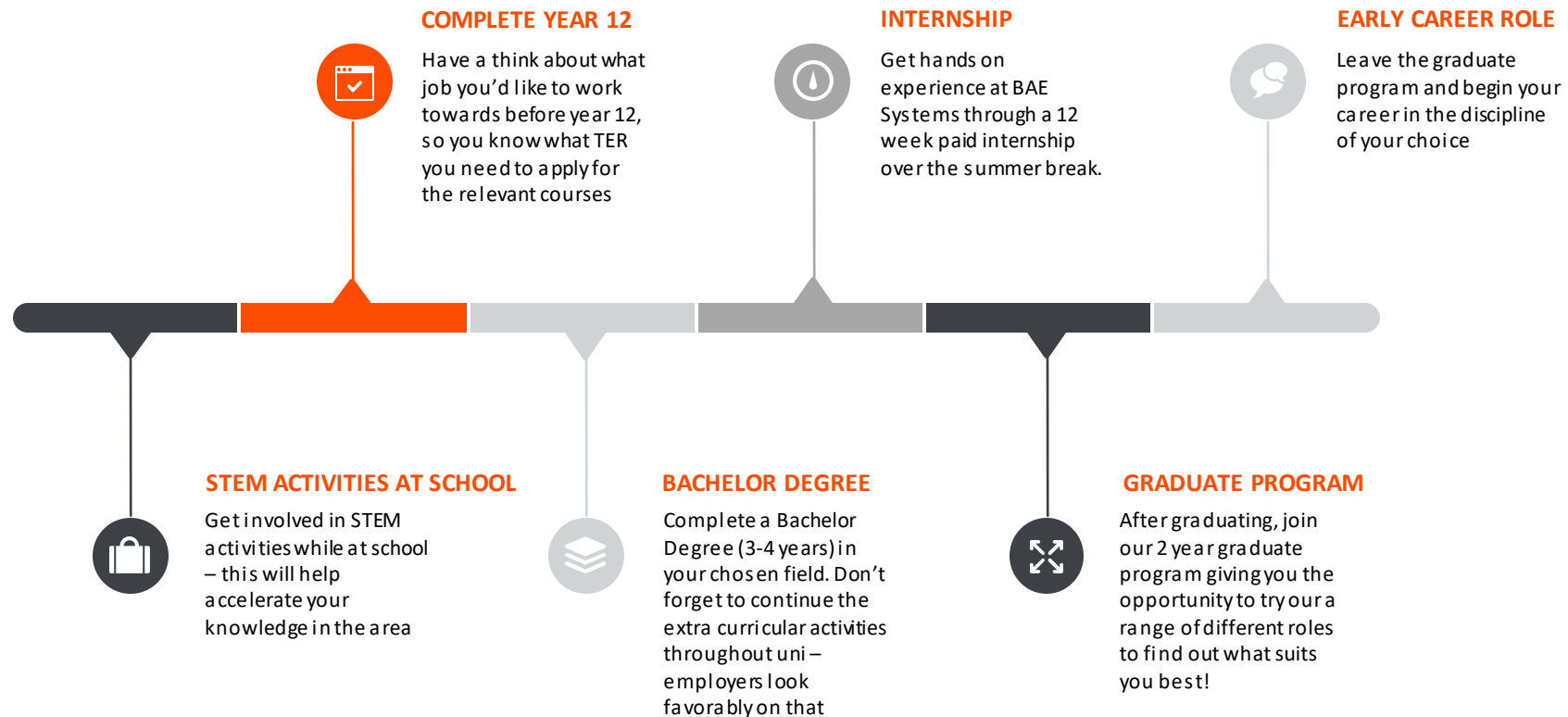
- Complex problem-solving
- Critical thinking
- Creativity
- People management
- Co-ordinating with others
- Emotional intelligence
- Judgment and decision-making
- Service orientation
- Negotiation
- Cognitive flexibility



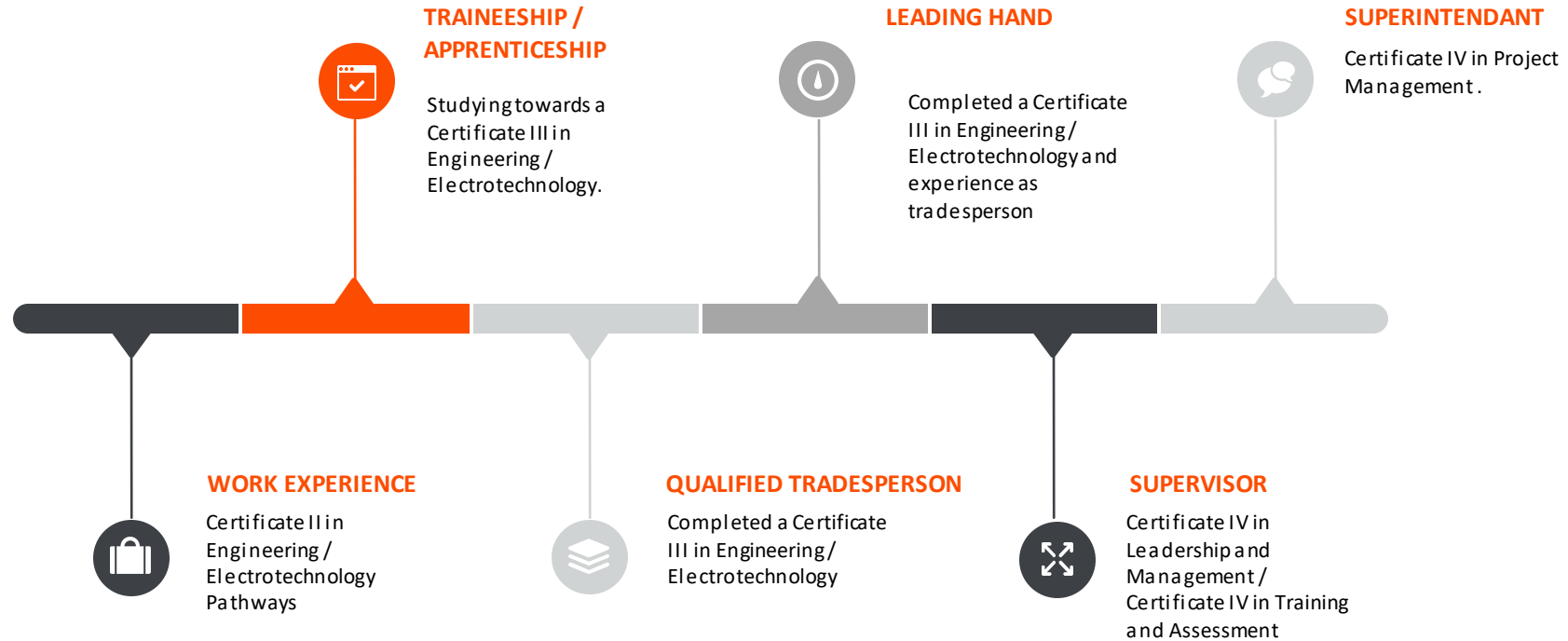
Career Opportunities



Graduate Engineer Career Pathway



Trade Career Pathway



AXIOM

PRECISION MANUFACTURING

AEROSPACE, SPACE AND DEFENCE



AXIOM
Precision Manufacturing

Axiom Precision Manufacturing

- Numeric Manufacturing T/A Axiom Precision Manufacturing
- ABN: 69 008 078 626
- 13 Johansson Rd, Wingfield, South Australia 5013

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F-35 Participation
Sole provider to BAE Systems Australia
for Vertical Tail Components

Facilities and Business Structure

Axiom is a family owned company that has been in business for 41 years. We operate 2 locations in South Australia, with our Head Office in Wingfield, the other location is Edwardstown where we currently have our injection moulding capabilities.

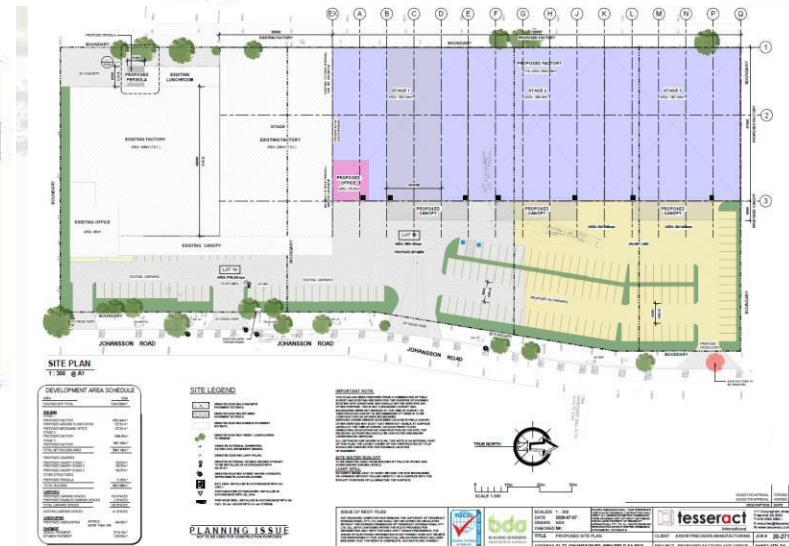
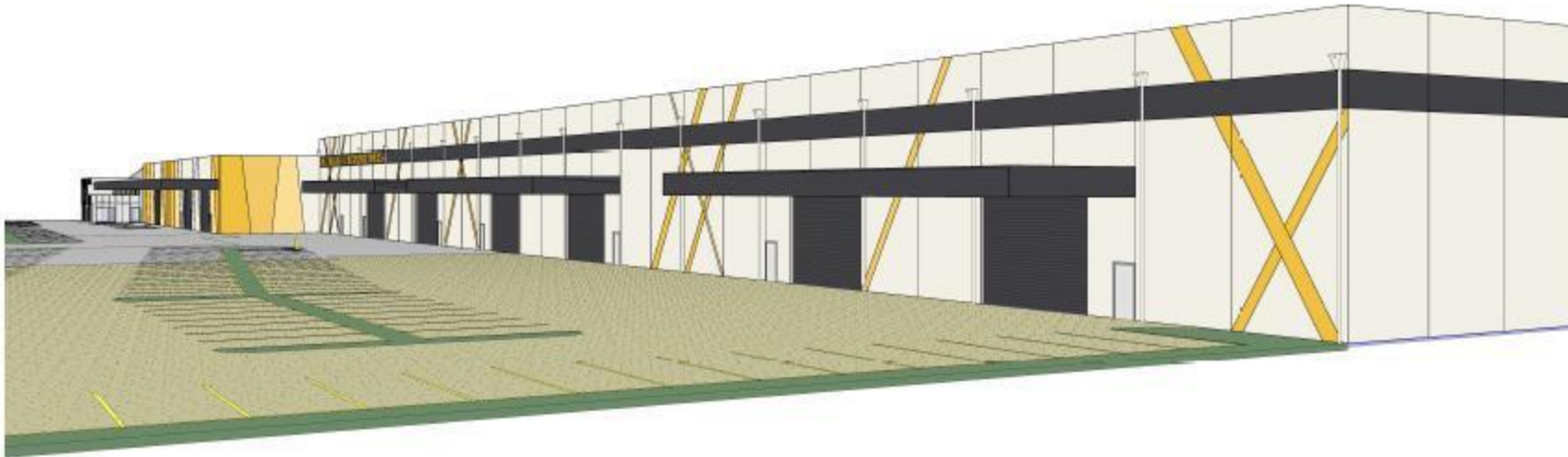
In November 2019 our Wingfield facility Phase 1 expansion was completed - a new 2,000 square metre zone 3 Defence secure facility. This facility will enable Axiom to manufacture for Defence programs up to “Secret” level.

Phase 2 expansion will see an additional 6,000 square metre secure facility being constructed, forecast for completion by August 2021. This facility is comprised of 3 separate 2,000sqm facilities, which can be connected or separated as required to facilitate project requirements.

Once Phase 2 expansion is completed, Axiom will be relocating our Injection Moulding capability to Wingfield, along with establishing increased Specialist Fabrication capabilities and equipment, along with increased Non-Destructive Testing (NDT) capabilities and services.

- *Wingfield facility - 10,200 square metres – of which 8,000 square metres built to Zone 4 Defence Secure*
- *Edwardstown facility - 1,200 square metres*
- *Current Staff – 77, including 9 apprentices*
- *2022/2023 turnover - \$17M*

Defence Secure Facilities



Capabilities and Project History

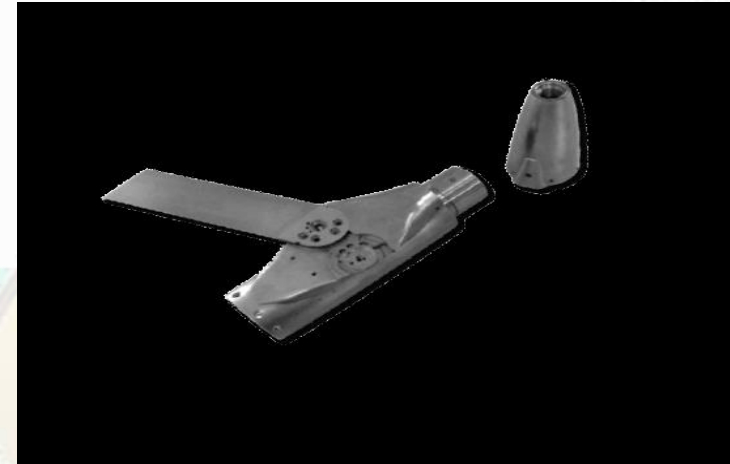
Axiom has 45 years of experience in manufacturing/CNC machining of components and assemblies. Today, Axiom specialises in two distinct areas:

- Producing precision CNC machined components and assemblies
- Electro-mechanical Design, Manufacture, Assembly, Integration and Test (AIT)

| Customer | Application | Work Conducted |
|---------------------------|------------------------------------|--|
| Boeing Defence USA | Chinook Helicopter | Flight Control Components |
| BAE Australia | JSF F-35 | Titanium Vertical Tail Components |
| ASC | Collins Class Submarine | CNC and assembly of Main Engine Bearings |
| Orbital/Boeing Insitu | Scan-Eagle; High Altitude Drone | CNC machined Engine components |
| Australian & USA DoD | Hypersonic Program | CNC machined thin walled components |
| Boeing Defence USA | Apache Helicopter | Billet CNC machined components |
| Lockheed Martin Space USA | Artemis Space, Man to Moon Program | Spacecraft assemblies |
| BAE Australia | Hunter Class Frigate Program | CNC machined components |
| L3 Harris | SILVERSHIELD Counter IED Device | Full System Manufacture & AIT |
| Raytheon Australia | Collins Class Submarines | Consoles; Weapons Systems Upgrade |

Missile and Space Programs

- J-Dam Components for DST-G including Nose Cone, Fuselage, Fairing's.
- Member of the Spike Missile Varley Rafael Australia {VRA} manufacturing team.
- Member of the Australian Missile Corporation team for CNC machined components.
- Axiom is currently manufacturing many components for the joint USA and Australian DoD Hypersonics Program.



Axiom opportunities during & post Apprenticeship

- * CNC, 3, 4 and 5 axis programming.
- * 3,4 and 5 Axis CNC precision machining.
- * Welding {Including KTig Robotic welding} and metal fabrication.
- * Project Management.
- * Mechanical design; component, special tooling, assemblies jigs & fixtures.
- * Electronic & electromechanical design.
- * Electronic manufacture and integration.
- * Inspection/co-ordinate measuring machines {CMM} department}.
- * Quality department; containing & improving our AS9100 Aerospace & Space Certification.
- * 3D printing; in-house polymer printing & metal printing to come.
- * Surface Treatment; in-house chromate conversion, Defence painting & powder-coating.
- * Defence security management and improvement.
- * Maintenance; repair and maintenance of all our machines, equipment & systems.

THANK YOU

Next steps:

- A recording of this webinar will be available on the Jobs Community page in DEWR's website.
- For feedback, further information or questions, please don't hesitate to contact us at engagement@dewr.gov.au