



A BETTER QUEENSLAND

Defence Industry opportunities in QLD

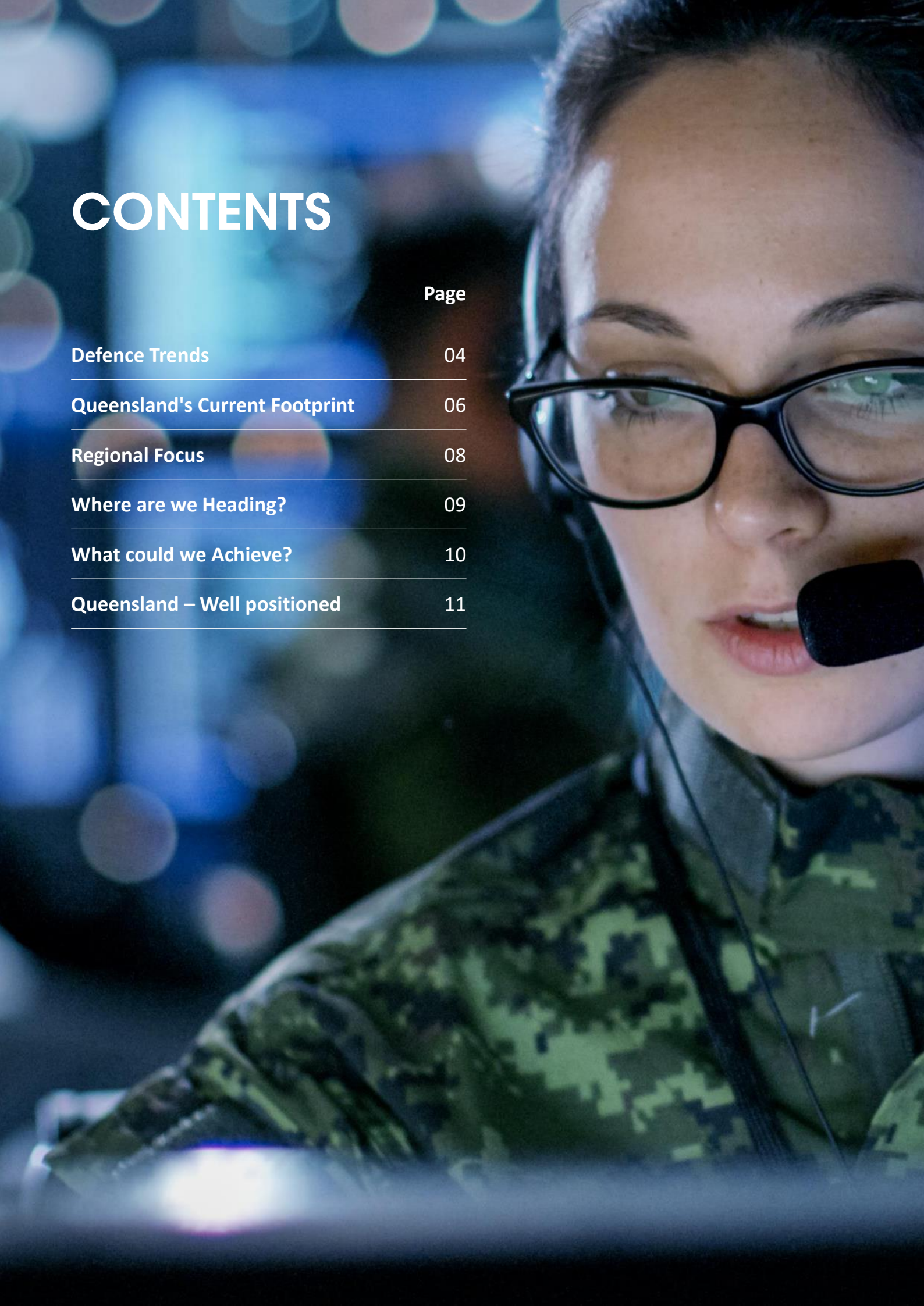
Queensland Futures Institute

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DEFENCE TRENDS



Defence released in May 2020 two documents **underlining broad federal stability in defence policy and planning.**

1. *Australia's Defence Force Posture and Engagement 2016-2020*
2. *2020 Defence Strategic Update.*

Government and Defence must now shift towards new priorities. These priorities and trends have an impact on the Defence Industry that works with Defence to deliver capability.



From 2020 Defence total Government funding ~ \$575 billion. Approximately **\$270 billion invested into Defence capability and industry to 2029-30.**



Supply chains impacted by regional competition primarily between the United States and China, will be the principal driver of strategic dynamics in the Indo-Pacific.

- Reduced strategic warning time for Defence planning.
- Australia will **Shape, Deter** and **Respond** in the strategic environment.

INSIGHT - DEFENCE INDUSTRY SUPPLY CHAINS

Defence strategists describe a declining security environment with ever greater challenges. The new context requires Defence to be able to address things such as reduced time warning and threats to human security. This changing strategic context has significant implications for the Defence supply chain of the future.

Reduced warning time

No longer being able to operate with long-term lead times requires increased agility to supply chains. Ensuring the identification of critical items with long lead times will be vital to complete inventory planning that maintains security and independence of action at shorter notice. This aligns to the development of sovereign industrial capabilities.

Threats to human security

Disaster response and resilience operations are expected to be more frequent, requiring greater consideration across capability life cycle and supply chain planning. Whilst capabilities can be redirected to these roles there is an imperative to develop efficient mechanisms to meet government requirements in a manner that preserves combat capability and is sensitive to the conduct of operations in the domestic environment.



The rise of a **Sovereign Capability** agenda

- Aerospace Platform Maintenance (Amberley and others areas)
- Domestic Munitions (NIOA manufacturing plant in Maryborough)
- Industrial Manufacturing support (e.g. Ship production, Armoured vehicles, munitions)
- 10 plus 4 recently announced Sovereign Industries (Space, Cyber, Artificial Intelligence and Guided Weapons). Ships and Sub plans not yet issued.

INSIGHT - SOVEREIGN CAPABILITY

The Sovereign Industrial Capability Priorities are areas that have been defined as being critical to the Australian Defence Force (ADF). Independence will be required domestically for manufacturing, maintenance, sustainment, technology and IP as well as ongoing industry involvement.



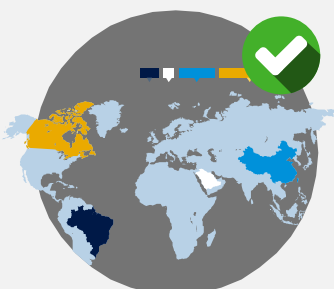
Evolution/Transformation, Training, Skilling, Workforce of the future.

- Distributed and virtual training of the Australian Defence Force (use of simulation and Augmented Reality).
- Micro-skilling and AI (e.g. Microsoft Hololense onto Soldier combat ensemble.)
- \$2.25 billion investment in ADF training areas. Based off treaty signed with Singapore for joint training exercises.



Industry as a Fundamental Input to Defence Capability.

- More durable supply chain
- More potent capabilities to respond to higher intensity conflicts and “Grey-zone” activities including improved situational awareness, electronic warfare, cyber and information operations.
- Deploy forces globally and greater reliance to deliver deterrent effects.



Geographic positioning. Strategic Update prioritises our immediate region – ranging from the north-eastern Indian Ocean, through maritime and mainland South East Asia to Papua New Guinea and the South West Pacific.

QUEENSLAND'S CURRENT FOOTPRINT

Queensland's Key Strategies from 2018 Industry Roadmap:

- 01** Grow Queensland's Defence Industry Capability.
- 02** Increase Queensland's Defence industry contribution to the national and global market.
- 03** Promote Queensland's defence industry capabilities.

Queensland's current position in the broader national Defence Industry eco-system.



\$23.54 BN

spent in industry,
Australia wide by
Department of Defence
in FY 20/21*

OF THAT NUMBER,

\$3.19 BN

awarded to
businesses with
ABN's registered
in Queensland

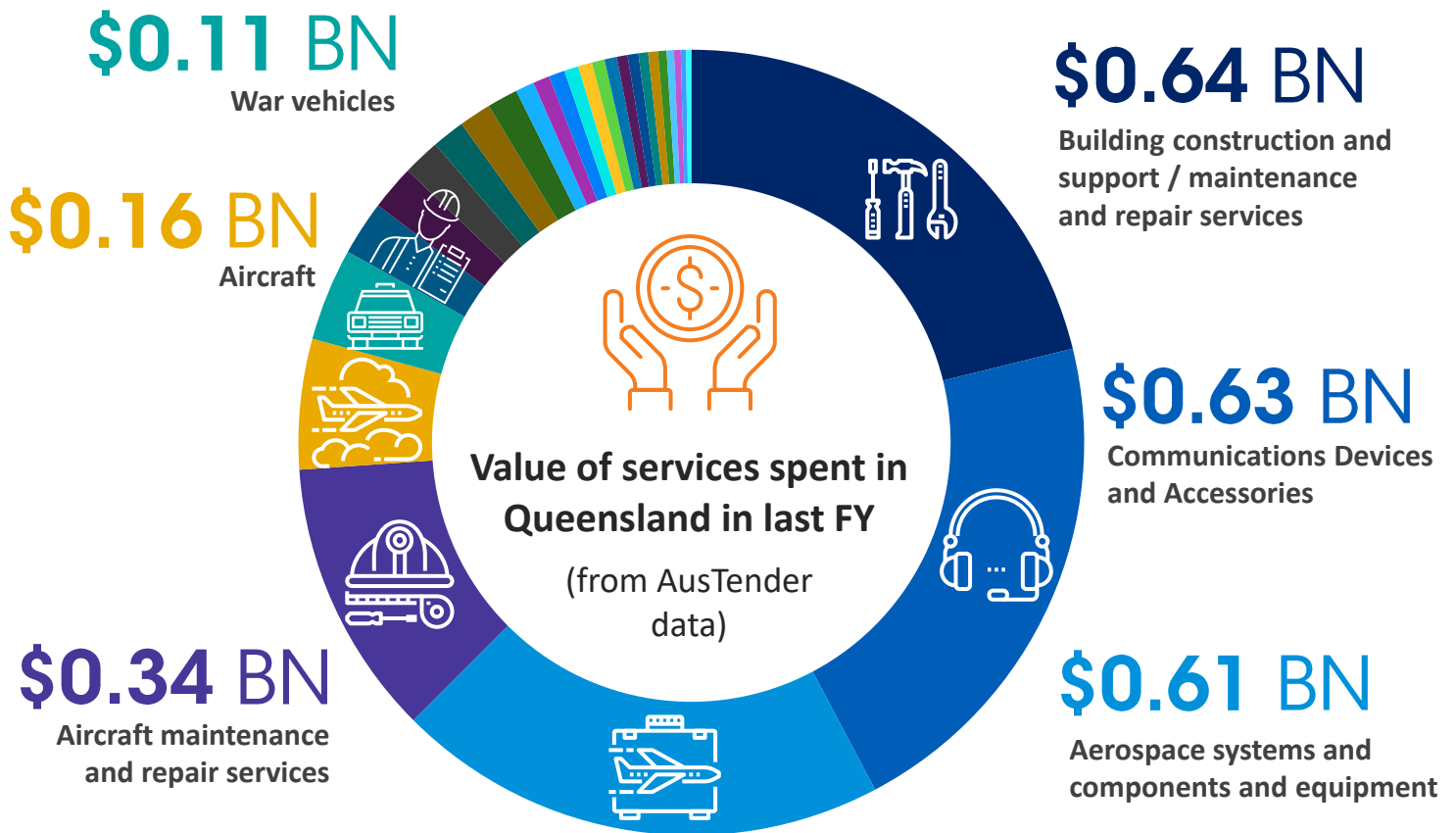


14%

of overall spend.*

* Data from AusTender website

This highlights the significant spend emerging in Aerospace systems, Communications, Weapons and munitions



- Building construction and support and maintenance and repair services
- Aerospace systems and components and equipment
- Aircraft
- Civil engineering
- Professional engineering services
- Light weapons and ammunition
- Management advisory services
- Management information systems MIS
- Roads and landscape
- Motor vehicles
- Aircraft equipment
- Earth science services
- Electrical equipment and components and supplies
- Military rotary wing aircraft
- Communications Devices and Accessories
- Aircraft maintenance and repair services
- War vehicles
- Education and Training Services
- Software
- Mail and cargo transport
- Components for information technology or broadcasting or telecommunications
- Electrical services
- Military science and research
- Personal safety and protection
- Military watercraft
- Water and sewer utilities
- Business administration services
- Arms and ammunition accessories

REGIONAL FOCUS

CAIRNS

- Pacific focussed maritime sustainment
- Maritime service & maintenance

TOWNSVILLE

- Advanced training and simulation
- Port of embarkation and amphibious ops training (port infrastructure development)
- Land material logistics support
- Veteran engagement
- Land service & maintenance

ROCKHAMPTON

- Advanced training and simulation
- Infrastructure development

IPSWICH

- Advanced training and simulation
- Port of embarkation and amphibious ops training (port infrastructure development)
- Land material logistics support
- Veteran engagement

REMOTE

Large area/low electronic clutter test, evaluation and training areas required for key sovereign priority areas such as: Hypersonic weapons, long-range precision guided munitions, autonomous systems, surveillance and intelligence and advanced signal processing technologies.



Leading edge technologies in the regions - Advanced Training & Simulation

- The concentration of land forces in Townsville, proximity to large scale training areas including access to littoral areas and an established industry and academic base make Northern Queensland an ideal hub for the development of advanced training and simulation solutions.
- Advanced training technology spans an array of areas such as: 5G, live, virtual and constructive (LVC) solutions, robotics and autonomous systems (targets), augmented reality and immersive environments giving rise to business opportunities including: research and development, instrumentation of ranges and maintenance of range infrastructure, provision and maintenance of training equipment and the delivery of training as a service.
- Veteran and STEM workforces are key enablers to the development of industry capability.
- Proximity to the users and training areas provides a unique competitive advantage for North Queensland enabling rapid trial and prototyping of technology.
- Defence and Army in particular are investing heavily in transforming training.

REGIONAL PLANS

Leverage existing resources including regional reports and strategy documents that detail local perspective on strategic intent, goals and focus areas.

WHERE ARE WE HEADING?

CONTINUING ON OUR CURRENT TRAJECTORY

Strategic positioning - Queensland is home to around 42% of the Army as well as the largest amphibious Army operations and training capabilities in the country providing an continuing baseline for Defence Industry.

Defence facilitates - Base support and redevelopment work of facilities (accessing an effective doubling of Defence facilities spend) across QLD continues.

Manufacturing and maintenance - The Rheinmetall MILVEHCOE LAND400 program has brought long-term maintenance and sustainment support to the region for up to 30 years.

Aerospace manufacturing – With over a third of the Australian enterprises based in QLD there is significant ongoing work in this space. This includes both in manufacturing and repair.

Near-term growth options



Opportunities for Small and Medium Enterprises

- The Global Supply Chain Program (GSCP) provides increasing opportunities for partnering Small and Medium Enterprises (SME's) with defence primes with to form part of their global supply chains.
- Resources such as the Defence and Aerospace Industry Development Fund are enabling Queensland SMEs to compete for national and international defence contracts and reducing barriers to entry by assisting with internationally recognised certification.



Partnerships

- The Defence Cooperative Research Centre for Trusted Autonomous Systems (DCRS TAS) aims to bring together universities and industry to collaborate on smart-machine technology assisting in the conversion of research to application.
- The Rheinmetall NIOA joint venture munitions plant commencing operation in Maryborough in 2022 will provide regional defence industry jobs and add to the sovereign military capabilities.



Leveraging our industry and geographic space

- The government has accelerated its priority for sovereign guided weapons manufacturing capability. Queensland can leverage its manufacturing industry capability to support the \$1bn Sovereign Guide Weapons Enterprise.
- With Australia's only supersonic to hypersonic wind tunnel located in the state and ongoing research partnerships with the US (HiFIRE – Hypersonic International Flight Research Experimentation Program) there is a geographical advantage to leverage.



Advanced training

- The Australia Singapore Military Training Initiative (ASMTI) being developed in central and north Queensland will provide advanced training areas for the ADF and increase local capabilities.

NEAR TERM SUPPORT

Over the next 2-3 years these near term growth opportunities highlight several avenues where support is available to assist entities interested in Defence Industry. Programs, funding and partnerships can assist new entrants and seek to reduce historical barriers to Defence and its broader Supply Chain.

WHAT COULD WE ACHIEVE?



Aspirations for the next 5-10 years...



Aggressive Focus on Sovereign Industrial Capabilities Opportunities

The announcement of four further sovereign priorities, in addition to the existing priorities ([link](#)), showcases the increasing role of digital technologies in Defence. Within the next decade the state has the opportunity to become a leader within these priorities:

- 1) Robotics, Autonomous Systems, and Artificial Intelligence (RAS-AI)
- 2) Precision Guided Munitions, Hypersonic weapons, and
- 3) Space
- 4) Information Warfare and Cyber Capabilities.



Building the workforce for the future ahead of the Investments

Ensure Queensland can meet future Defence capability requirements, equipped with the right people and skills to succeed. Attract new talent through STEM students and prepare the current workforce with reskilling through grants such as Skilling Australia's Defence Industry (SADI).



Disrupt and disintermediate with local solutions

Disruption is fast becoming the new norm. Innovating and improving the conversion of research and ideas into application will further Queensland's competitiveness.

At the same time the old approach of 'buying for overseas OEMs' is less attractive. An on-shore trusted set of solutions business employing contemporary lean systems (think SpaceX and NASA) may be a play.



Beyond Australia

Over 63% of the defence industry already export at some level, long term domestic delivery can be leveraged to improve international recognition and grow opportunities.

This is supported by the Defence Export Strategy which has set the strategic goal of Australia's defence industry being a top ten global defence exporter by 2028.

CASE STUDY Gaardtech

Brisbane based start-up Gaardtech won a \$1.7m deal earlier this year to supply the British Army with robot replica military vehicles for advanced training systems.

The company was a recipient of the Advance Queensland Ignite Ideas Fund in 2019.

They are also under contract to provide close air support (CAS) training service to the Australian Army.

Gaardtech are an exemplar of local defence industry innovation and manufacturing going global.

Thoughts for a Blue Sky Horizon:

.....
How can we differentiate in a world of ever increasing innovation, change, and uncertainty?

.....
What could we achieve without our current constraints (challenges, finances, resources)?

.....
What unexpected connections could we create to accelerate growth?

.....
Could we position selected industrial assets as globally leading?

QUEENSLAND IS WELL POSITIONED FOR NATIONAL REQUIREMENTS

Queensland is underpinned by a strong defence industrial base and world-class capabilities in a range of areas.

Queensland defence industries' '10-Year Roadmap and Action Plan' identifies priority industry sectors, with opportunities in these key sectors to be maximised by leveraging Queensland's advantages which include; strong defence presence, advanced capabilities, strength in regions and strategic location.

Strengths in other Australian states provide an insight into sectors of opportunity for Queensland. **Western Australia** and **South Australia** have strong shipbuilding capabilities with

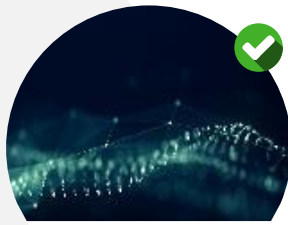
the Henderson Maritime Precinct (WA) and Osborne Naval Shipyard (SA) hosting continuous build programs. South Australia is an emerging hub in information warfare. The Defence Science Institute, Defence Materials Technology Centre and the Australian Manufacturing and Materials precinct are all based in **Victoria**. **New South Wales** seems to be leading in cybersecurity, with Australia's largest information and communications technology (ICT) sector.

Areas Still 'in play' for Queensland:



Space

- High growth area nationally – sovereign priority
- Long-term growth prospects
- Spans space and ground based assets
- Tight synergies between Defence and commercial space opportunities



Digital Technologies

- Established momentum: Cyber Security Innovation Nodes in Brisbane and Townsville as part of AustCyber's National Network of Cyber Security Innovation Nodes.
- Development frameworks provide direction: Navy 'RAS-AI Strategy 2040' and ADF's 'Concept for Robotic and Autonomous Systems'



Advanced Training Simulation

- Large and unique range areas
- Leverage Defence Cooperative Research Centre for Trusted Autonomous Systems
- Major opportunities with Navy and Army



Hypersonic

Queensland is leading academic research into Hypersonic capabilities through University of Queensland.

This research can be utilised into the development of hypersonic technologies for Defence.



Guided Weapons

Operation Scale-Up 2021, providing the opportunity for local businesses to become defence industry ready in collaboration with defence industry partners.

Australian-owned defence prime NIOA has received the Federal Government's commitment to invest in domestic guided missile production.

WHERE TO FROM HERE...

- 1) Research and education (For example, utilising Queensland industry strategy and sovereign industry plans)
- 2) Participate in industry engagement forums (e.g. respond to EOIs)
- 3) Engage relevant industry bodies (e.g. industry advisors for each domain)



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