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Defence Business speaks with Minister for Defence Industry, Melissa Price ahead of her involvement with the DTC's Virtual Defence Industry Summit.



COVID-19 has highlighted the fact that Australia does not have the sovereign capabilities it needs. As a result, governments have been left scrambling.



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THIS MAGAZINE IS PUBLISHED BY BOYLEN FOR THE DTC

www.boylen.com.au

ADVERTISING ENQUIRIES

sales@boylen.com.au 08 8233 9433

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Madelaine Raschella Henry Rivera

PHOTOGRAPHY

Department of Defence

FREQUENCY

Quarterly ISSN 1836-9502

DTC CHARITIES OF CHOICE

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Using COVID-19 As A Springboard

FROM THE DESK OF THE CEO

Audra McCarthy, Chief Executive Officer

Connecting

Whilst the COVID-19 pandemic has been very disruptive to business one great outcome has been industry's desire to embrace digital technologies. I recently saw a post on LinkedIn asking businesses to identify who in their business was responsible for the digital transformation of their business. Typically, most organisations will nominate the Chief Information Officer, perhaps the CEO or even the General Manager. On this occasion, it was COVID-19. As a society we've now gone through the awkward change process of embracing technology, learning how to pair our headsets with laptops and how to switch our microphones on mute when not in use. Online meetings and teleconferences are the new norm. Whilst technology does not allow us the physical interaction that human beings are accustomed to, it has substantially enhanced our ability to withstand the disruption and isolation of COVID-19.

Like many of our members, the DTC has had to make major changes in response to COVID-19. Restrictions on hosting physical events and the cancellation of our highly respected annual dinner have created serious financial impacts to our business. But, instead of helplessly standing by and holding our hands in the air in despair, our business has evolved, and I'm truly pleased to be working with such a highly motivated and innovative team. We have been transferring services to online delivery where we can and this guarter's edition of *Defence Business* in a completely online format, is another example of the DTC's adaptation.

Recently the team delivered a two-day virtual summit. This was an activity never before undertaken by the DTC, let alone any other organisation in the defence industry sector. It is safe to say this decision came with its challenges but with challenges, comes rewards. The reward of achievement. The reward of accomplishment and most importantly, the reward of sustainability. Just like my members, I am running a business and am facing similar business management hardships and risks. For the very first time in my working career, I've now had to put in to practice all of the business advisory tools and advice I once gave to my members when I worked as a Business Advisor for the Defence Industry Innovation Centre. I can safely say, I'm now walking a mile in my members' shoes. The DTC is only as successful as its members, and our members' success depends upon our ability to continue to connect and develop. I relished the challenge of delivering the very first two day virtual summit for defence industry and I hope DTC members remain proud to be a part of an organisation that is driven to remain at the forefront on their behalf.

Developing

Recently the Minister for Defence Industry announced a quadrupling of the Skilling Australia's Defence Industry (SADI) program. This announcement means SMEs can access skilling grants to offset the cost of professional development and upskilling

activities for the defence market. This means professional development programs like the DTC's Defence Industry Leadership Program and our Professional Certificate in Defence Industry Leadership Program through the University of Adelaide, will be more affordable to Australian SMEs. It also means our Defence Industry 101 and 102 courses can be broadened and more accessible to industry at an affordable cost. I believe this announcement by the Government is significant and indicates how much the Government values Australian industry.

Advocacy

The majority of DTC members can testify, how it can often take three to five years of business development effort before your business will be successful in the defence sector. It is also widely known there are many challenges and costs to doing business in defence. This is why I want to focus the DTC's advocacy on devising solutions and tools that will greatly reduce the cost to Australian SMEs of doing business in defence. Capability improvement grants and skilling grants like SADI, go a long way to helping SMEs however, I believe there is more that can be done. This includes: devising attractive payment and contractual terms that actually attract industry to the sector; working with defence primes to devise tools like supplier assessment checklists that enable industry to undertake self-assessments in preparation for entering the sector; and providing security management solutions through shared services arrangements, so that SMEs can access professional, high calibre products and services, at a fraction of the cost.

As we saw in the recent federal budget announcements, the defence sector will be instrumental in rebuilding the Australian economy post COVID-19. To maximise the Australian taxpayer's return on investment, we need to maximise the amount of expenditure that remains here in country. The recent changes made to the procurement guidelines regarding economic benefits is a positive step towards achieving this. The economic value to Australia will now be considered in any major procurement decision. Economic benefit calculations and models can be complex. I wonder whether there is enough expertise in those making procurement decisions to understand the claims made in tender submissions and to compare the claims in competing tenders? Is it possible we will create a situation where a few years down the track industry will be lobbying for the audit of economic benefit calculations and statements?

Finally, I'd like to publicly acknowledge the amazing work of our magazine publisher Boylen, in supporting the DTC to produce the *Defence Business* magazine. The new digital format is proving very popular and it offers a targeted way for companies to reach decision makers in the Australian defence sector. My thanks to Boylen for your ongoing commitment and support of the DTC, I thank you.

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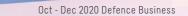
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Australian Space Milestone

September 19, 2020 will be remembered as a historic day in Australian space history. It marks the date of the first commercial rocket launch to the edge of space from

The DART sub-orbital rocket carried a Defence payload, including an Australian designed and made miniature radio frequency receiver prototype

The launch was the first to take place from the Southern Launch Koonibba Rocket Range, a new commercial rocket range 40km north-west of Ceduna on the West Coast of the Eyre Peninsula in South Australia. It was a collaboration between the Royal Australian Air Force and Australian industry partners - Southern Launch and **DEWC Systems**

At just 3.4 metres long and weighing 34 kilograms, the DART rocket is a fraction of the size of rockets launched by NASA and SpaceX.

Minister for Defence, Senator the Hon Linda Reynolds CSC said space was an increasingly important domain, which is why the Government is investing \$7 billion over the next decade in space capabilities as part of the 2020



(L-R) Chief Executive Officer DEWC Systems Ian Spencer, Royal Australian Air Force Director Integration and Innovation, Group Captain Tobyn Bearman and Chief Executive Officer of Southern Launch, Lloyd Damo at the Southern Launch Koonibba Rocket Range, near Ceduna, South Australia,

Defence Strategic Update and Force Structure Plan.

"The payload, carried on a DART rocket, provides a stepping stone for Air Force to explore how advanced rapidly deployable networked sensors can be employed to provide information across Defence networks,"

Minister Revnolds said.

"Air Force's Plan Jericho has sponsored this prototype, developed by DEWC Systems, and marks an exciting future for Australia's space capability."

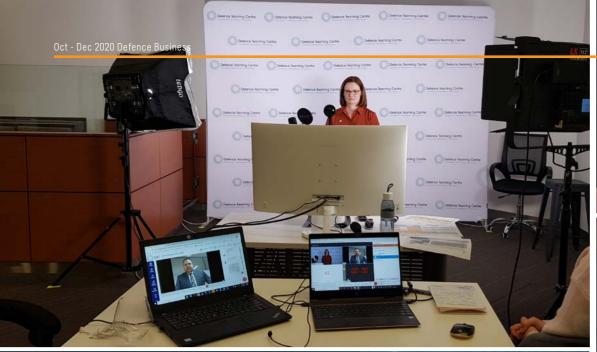
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Defence Industry Virtual Summit

Connecting & Developing Industry for Defence



National Summit Examines Key Defence Issues

Three key themes emerged from a national summit designed to help companies improve their chances of winning defence contracts.

The two-day Defence Industry Virtual Summit was organised by the DTC and delivered remotely to a national and global audience.

The first main theme was the importance of sovereign industrial capability and what that currently means for both Defence and industry.

"There was a lot of discussion about how the definition and importance of sovereignty has evolved significantly since the start of the COVID-19 pandemic," said DTC CEO, Audra McCarthy. (Jump to page 18 for more reading on sovereign industrial capability.)

"The second thing was the importance of policy to industry. We heard the message a number of times that whilst policy might appear dry and boring, it's really important to understand and read that policy because it shapes decisions and it shapes action.

"For businesses wanting to get into our sector, if you read the defence industry policy you can better understand the target market more clearly, making it easier to enter.

"A third key theme was around value and in all three areas our speakers provided real, tangible advice and information to better help delegates conduct business."

The array of guest speakers from Defence and SMEs from around Australia attracted nearly 350 delegates covering Australia, the US, UK, Japan and New Zealand.

Price And Value

Audra said the objective was to bring new speakers with fresh perspectives. This included information on how to handle a price war, how companies can clearly articulate their value proposition and how they manage risk.

This was echoed in the discussion panel by Diane Edgerton, the CEO of Tasmania's Direct Edge Manufacturing, who said she refuses to get into a price war. That was new. We don't hear that very often and to have it reinforced subsequently was really powerful

We then had Sam Willis talking about Checkside's story. His advice was on growing a business, and that if you're wanting to team and have an external investor join your business, you need to do the groundwork beforehand. You need to invest in your systems and processes beforehand, so that you can actually embrace that opportunity instead of fire-fighting.

He also spoke about the lessons learned from their experience, where they suddenly went from about 10 staff to 50 and the huge stress this imposes on a small business."

Audra said it was not uncommon for small businesses to win major defence contracts and have to implement a rapid, large scale ramp up process, which had not been anticipated

"Sometimes they don't know what systems they need in place to accommodate that, making it difficult to know how to be prepared," she said.

Another key message was that Defence, from the highest levels down, is keen to engage with industry.

"We haven't seen that level of collective engagement previously. As an industry, we need to do more to embrace that. We need to do more to connect the Defence end user with industry so that we can get better, targeted innovation to the end user,"

The presentation by Kate Carnell, the Australian Small Business and Family Enterprise Ombudsman, was particularly well received. She talked about the frustrations and complications of panels, payment terms and contractual terms that are open ended and unlimited.

"There's a lot of work to do there," said Audra. "Obviously, Kate is the right person to help us improve that."

It Takes Time

The event highlighted the DTC's ability to provide services to industry across Australia, through the use of professional digital tools and technology that supported knowledge sharing and collaboration.

One message the DTC continually emphasises with new entrants is how long it takes to get into the defence supply chain - and this was reiterated by a range of speakers.

"Many people just don't understand that it can take 3-5 years and they expect action straight away," said Audra. "And I know that's not new but I found it reassuring to hear the same message delivered by others in the community.."

You can still access recordings of the Summit via the DTC's Events website page 🧇



Solinnov Solving Complex Problems For Defence



The admission to a high-level defence group is the latest milestone in a 14-year journey for Solinnov

Solinnov is a private Australian company that provides high performance embedded electronics and complex signal processing algorithms for the defence and civil sectors.

Recently it was officially welcomed to the C4 Edge (Evolutionary Digital Ground Environment) defence industry cooperative team. The co-operative exists to grow and demonstrate Australian C4 (command control communications and computers) industry capacity.

Solinnov's involvement in this collaboration of industry leaders is testament to a knowledgeable, passionate and creative team, led by Managing Director and CEO Sanka Piyaratna, whose entrepreneurial spirit was established at an early age.

"There was a man in the village where I am from in Sri Lanka, he would load up his car with bags of fruit and veg and take them to the local market to sell," he said.

"Over time he sold into the next village and the next village...then he had a truck, then two trucks. He ended up with 12 trucks and employed a lot of people in the village.

"He was well respected and liked. I wanted to be like him, to run my own business".

Sanka didn't know fruit and veg but he did know electrical systems, having completed a Bachelor of Engineering (Electrical and Electronic) with First Class Honours at the University of Adelaide, followed by a Master of Engineering, Signal Processing Bio Medical Engineering at Nanyang Technological University in Singapore.

Whilst finishing his postgraduate studies in Singapore, he was offered a position with Adelaide company DSpace, that designed satellite communication devices. The job cemented Sanka's love for signal processing.

Sanka started Solinnov (a blend of the words solutions and innovative) in 2006, consulting to companies such as Auspace, BAE Systems and the then Defence Science and Technology Organisation (DSTO).

However, the business was put on hold while Sanka took on a full-time role with DSTO as a research scientist, where he added radar and electronic warfare to his expertise. Yet the entrepreneurial spirit once again came calling and in 2010 Sanka rebooted Solinnov.

Drawing parallels with the fresh produce vendor, one project became two projects, two projects became three, and by 2015, Solinnov had grown to the point where Sanka needed to hire his first employee. Shortly after, he required a second employee. Today the company employs 16 staff.

Problem Focused

When starting the business, the defence sector was a natural fit. Nevertheless, it was hard to break into and the looming 'valley of death' seemed inevitable.

"It wasn't as prosperous as it is now, but it is evolving, and I feel that there is a lot more encouragement to use local industry," said Sanka.

"This is very positive, but we can do more.

"We do really great things in Australia but there is still work to be done to convince people of that.

"Companies are still relying on R&D dollars to survive, and without that R&D investment, it is very difficult to develop that ground-breaking technology.

"Solinnov probably sees less than 1% of the problems that we can solve for defence. Our business, like all businesses, exists to solve problems and we would like to create more opportunities within defence to connect problems to problem solvers.

"And we need to think bigger and aim higher. If we do not, the younger generation in particular, are not going to be inspired.

"As a company we want to grow, but I would also like to see us aiming to grow as a whole defence community, to take on bigger projects.

"We are all working towards a clear goal, which is to protect Australia, so it makes sense that we nurture and grow the whole community."

For companies looking to get into defence, Sanka believes that developing relationships and connections is important. Also, going the extra mile for the client.

"We have built strong relationships over many years and through trying to deliver better, or more than what people ask for, be it with support or technical content.

"We hope our reputation speaks for itself. We find people recommend us now, which is great."

DTC Value

As a long time DTC member, Sanka believes the DTC has played a key role in developing his personal leadership skills.

"DTC's Defence Industry Leadership Program was incredibly beneficial to me. Leadership is a valuable asset for us and a big advantage to membership.

"As a leader I make sure that, while we are working hard for our customer, we are having fun at the same time.

Oct - Dec 2020 Defence Business MEMBER FOCUS

"If you don't take the risk, you can't push the boundaries, but I think people are starting to believe now that we can do this".

"And I value the contribution every single team member makes. We all need to feel like we're contributing to something significant. We all want to grow and contribute to a bigger goal, so I try and recognise what each individual team member's needs are, and that ...these needs are met."

Krystal lacopetta, Project Coordinator, said Solinnov provided a great working environment: "I come from a completely different background, but the team has been so welcoming and supportive, they have really inspired me to seek further training within this field

"The projects we work on are cutting edge and the feeling of creating revolutionary Australian capabilities right here in Adelaide is highly motivating."

Risk Reward

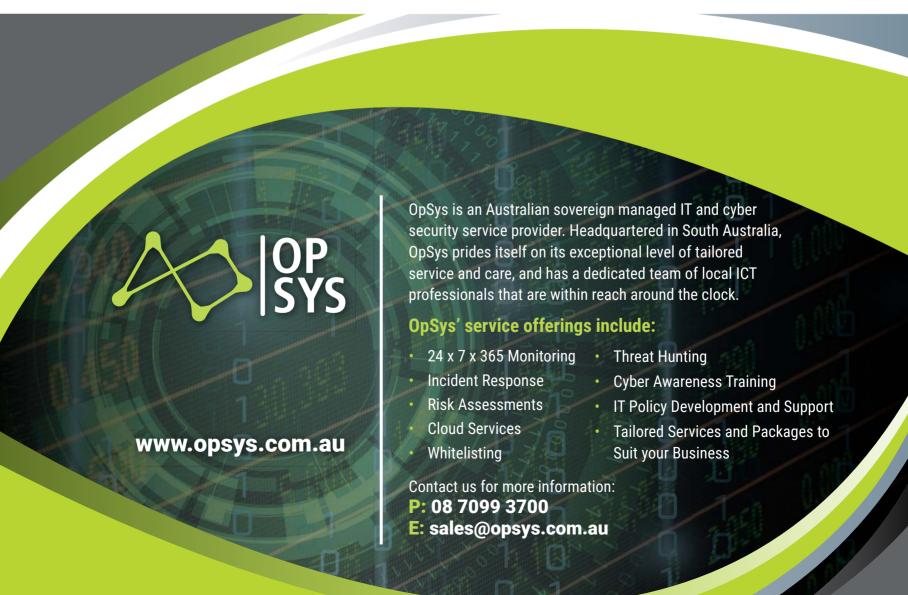
Solinnov has a solid 10-year strategy that sees it continue to grow revenue locally, expand into at least three countries and have 200 employees, all whilst keeping the vibrant culture intact. Taking risks and pushing boundaries is key to this growth.

"When I first started the company, people were sceptical that I could sustain such growth," said Sanka, "but we have pretty much doubled every year, and now people believe that it is actually possible.

"If you don't take the risk, you can't push the boundaries, but I think people are starting to believe now that we can do this".

The inspirational man from the village market would definitely agree.





10 MINISTER PRICE Oct - Dec 2020 Defence Business

Minister Price Answers Eight Key Questions



Defence Business spoke with Minister for Defence Industry, Melissa Price ahead of her involvement with the DTC's Virtual Defence Industry Summit.

1. The independent review of the Australian Government's Centre for Defence Industry Capability (CDIC) has now been handed to government. Can you comment on the key recommendations?

On 15 September, Minister Reynolds and I released the review of the CDIC. The review makes several recommendations aimed at boosting support for Australian defence businesses. Among these, the review calls for strengthening the alignment between Defence, defence industry and the CDIC by relocating the CDIC to the Department of Defence. The review also recommends scrapping the 200-employee limit for businesses to be able to access the CDIC's services. The review recommends creating greater opportunities for businesses in regional Australia through an outreach program, while Indigenous and veteran-owned small businesses should also become a focus of the revamped CDIC.

"COVID-19 has been a challenging time for all Australian businesses, and I have remained steadfast in my commitment to supporting the resilient and innovative small and medium businesses that make up Australia's defence industry."

2. The new National Defence Industry Skills Office (NDISO) will engage with local industry on the four approaches to skills development. What changes can defence industry expect and how will it help the skilled workforce requirements of defence business?

The 2019 Defence Industry Skilling and STEM Strategy provides a comprehensive approach to supporting Australia's defence industry to fill its current and future skills gaps around four pillars: Engage, Attract, Train and Retain and Collaborate.

COVID-19 has been a challenging time for all Australian businesses, and I have remained steadfast in my commitment to supporting the resilient and innovative small and medium businesses that make up Australia's defence industry.

The Morrison Government recently boosted funding under the Strategy by an additional \$55 million over two years through the broader economic stimulus package to support defence industry through the COVID-19 pandemic.

This funding will provide additional skills-related support to defence industry over the

shorter term, while continuing to deliver projects which meet existing Defence Industry Skilling and STEM Strategy objectives in light of the impacts of COVID-19.

Through this funding, the Government is working to strengthen Australia's sovereign defence industry workforce skills capabilities, reduce the cost to small-to-medium enterprises for training individuals, and provide funding for cyber training. In addition, this funding boost will increase cash flow to SMEs up front for training costs for existing and new staff, create opportunities for people looking to transition into defence industry, including naval shipbuilding, and boost awareness of defence industry as a viable career option.

Now, more than ever, it is vital that the Morrison Government supports the work of our defence industry, and creates an environment in which they can continue to innovate and deliver for our ADE.

3. The joint response by both Defence Ministers and the senior leadership of Defence to reaching out to industry at the commencement and during the COVID-19 pandemic is something never before seen by defence industry. This response reinforces how genuine the government is about industry being a fundamental input to capability. Are you able to reflect upon the challenges you encountered during this process? Did this process identify any opportunities for industry and government to work more closely? What did you learn about industry during this process?

It is so important for our Government to keep the wheels of defence industry turning. That's why I have been regularly engaging with key defence industry representatives through weekly and fortnightly teleconferences to keep them informed on important updates. This regular industry engagement has allowed us to rapidly address issues arising from the COVID-19 pandemic.

We have worked hard to deliver essential defence capability while remaining exemplary in our compliance with health restrictions. I knew prior to the COVID-19 pandemic that our defence industry's agility and resilience would allow them to remain strong during these unprecedented times, and they delivered and exceeded my expectations – through their rapid refocus to support medical and protective equipment, to adapting to working at home.

I will continue to drive the Morrison Government's agenda to create a stronger defence industry.

4. Government's decision to accelerate payments to industry during the pandemic was an announcement that was greatly appreciated by industry. We know Government's standard payment terms are 20 days, however some larger contracts with primes have terms and conditions of 30 days or in some cases longer. Given the need to attract and support Australian SMEs to the defence sector, will there be an expectation going forward that payment terms of the Government's standard 20 days will be contractually flown down the supply chain?

Cash flow is one of the most important factors in operating any business. The Morrison Government has been driving accelerated payments since the start of this pandemic to help local defence companies to keep running during these tough times. We have also announced that accelerated payments will continue into the New Year. As industry knows, I have commissioned and will oversee a review into the Australian Standard for Defence Contracting (ASDEFCON). There may well be scope to consider the issue of changing payment terms to help the Australian supply chain, within this review, and I would of course welcome industry's view on this.







5. Minister Price, you have mentioned a number of times the need to attract and pull Australian industry into the sector. However with payment terms of 30-60 days and some prime's supplier assessment process taking approximately 2 years before an SME is able to bid on a work package, how is the Government working with industry to reduce these challenges?

It is absolutely my expectation that we provide Australian businesses with the right tailored support from Defence and the eventual reformed CDIC so that we build up capability in the SME community and make it more competitive. The review into ASDEFCON will be an extensive and thorough process. At the end of the day it must work to reduce burdensome red tape on industry. It must reduce costs, processing times and unnecessary documents. This is also an opportunity to look into the terms and conditions of a contract so that Australian businesses in the Defence supply chain have the right structure and contracts in place to support them in the future. This would be especially timely, as the Morrison Government delivers its ambitious \$270 billion Defence capability plan.

6. Recently there was an article in the Australian about the operational costs of the CDIC being almost half of the value of grants awarded to industry. This represents an overhead rate of almost 50%. Are you able to comment on any outcomes from the CDIC review that will see improvements implemented to change this to deliver greater value to Australian industry?

I am happy to correct the record here. The operational costs of the CDIC are not 50 per cent of the grant value. Core funding provided to the CDIC, which is separate to funding for grant programs, includes costs of administering grants. But this funding also includes costs for the CDIC's operations to support defence industry. This encompasses things like industry outreach activities and regular engagement mechanisms. These include things such as the CDIC newsletter, the provision of advisory and facilitation services to small businesses in the defence sector, CDIC presence at Australian tradeshows, and funding to support the Global Supply Chain Program.

As I mentioned earlier, the CDIC review has proposed a series of recommendations aimed at boosting support for Australian defence businesses.

7. The Australian Industry Capability Program is a hotly debated and politicised topic in the public arena. On one hand we have a policy that encourages

Australian industry involvement in government expenditure, yet we are seeing debate emerge in the public arena about the need for ownership rules be implemented and applied such that the definition of Australian industry is specifically defined as companies that are Australian owned and controlled. Is this a policy change the Government is considering?

The Australian Industry Capability Program seeks to maximise opportunities for Australian industry participation in Defence procurement with the aim of developing an enduring Australian industrial capability.

Australian defence industry comprises businesses with an Australian Business Number and Australian-based industrial capability, such as Australian company and board presence, skills base, value-add work in Australia, and infrastructure.

These businesses provide, or have the capacity to provide, defence-specific or dual-use goods or services in a supply chain that leads to the Department of Defence or an international defence force.

The Government does not intend to amend this definition at this time.

However, I do highlight recent changes made to the Commonwealth Procurement Rules guidelines, requiring greater consideration of the broader Australian economic benefits which are to be taken into account by Australian Government Agencies. This includes the domestic economic benefits which support the development and sustainment of industry capabilities, and examples which include the Defence Sovereign Industrial Capability Priorities.

8. The recent pandemic has given us cause to reconsider how we define sovereign capability. Are we likely to see any policy changes emerge regarding sovereign capability and industry?

This is what I call the pointy end of AIC, identifying what sovereign capability we need in Australia and make it clear to industry what our Defence manufacturing priorities are. This will be a key focus of mine on the road ahead as we embark on a road to shore up our Defence manufacturing, create new skills in our workforce and bring in IP from overseas so that we have sovereign control over certain Defence capabilities that we haven't had before. So yes, I think there is scope to build on the existing structure and deliver a more fit for purpose framework.



Sydney City Marine Achieves Elite Status



DTC member Sydney City Marine (SCM) has joined an elite group of eight facilities across Australia to be granted facility qualification for the docking of ADF vessels.

The rigorous process was conducted by the Naval Technical Bureau (NTB), which assessed that SCM has achieved the requirements of the Australian Defence Force (ADF) Maritime Material Requirements (MMR) for Slipping and Docking of ADF vessels (DEF(AUST) 5000Volume 2 Part 20: Slipping and Docking).

SCM is a multi-faceted maritime repair and maintenance facility situated in Sydney Harbour. It provides local and sovereign sustainment capabilities and is located in Rozelle with waterway access to key Defence establishments such as HMAS Waterhen and Fleet Base East (Garden Island Dockyard).

"It is great to see and finalise this terrific outcome," said CDRE Colin Dagg, CSC, RAN – Director General Engineering – Navy.

"It shows a level of professionalism and cooperation that will place Navy, CASG and Sydney City Marine in a very good place for the future. I wish Sydney City Marine all the best for the future and thank them for their ongoing support to Navy."

Capabilities

It is critical for Defence to keep its maritime capability in a seaworthy state and SCM adds deeper resources for Navy to achieve this objective.

"The awarding of this formal qualification demonstrates the highest values of professionalism of our team and our facility," said Brenton Fischer, SCM Director.

"It further validates our ability to provide exceptional levels of service and capability to

the ADF. We are very much looking forward to continuing to work closer with the ADF in the future."

SCM is now qualified to provide the highest levels of service to the ADF for vessels up to 800 tonnes. It is also well placed to extend those support services to contribute to the easing of ongoing docking pressures at Fleet Base East.

SCM has also recently extended its partnership with Naval Ship Management (NSM) for facility and vessel maintenance services for the Royal Australian Navy's 12 Landing Helicopter Dock (LHD) Landing Crafts (LLCs).

This new long-term agreement is a natural fit for NSM after Sydney City Marine was awarded Naval Technical Bureau (NTB) qualification from the Director General Engineering – Navy for slipping and docking vessels. The agreement enables NSM to meet the contractual obligations of the LHD Asset Class Prime Contractor contract, This is another example of NSM's inclusive approach to naval sustainment and commitment to Australian industry.

"NSM is committed to supporting local small-to-medium sized businesses throughout the Australian maritime industry and we're proud to extend this valued partnership with Sydney City Marine," said NSM's General Manager, Joe Smith.

Fischer added that "this long-term agreement further validates our credentials as a key service provider for Defence assets and ensuring the availabilities of the LLCs is critical in achieving the fully operational conditions of the LHDs, a responsibility to NSM that we take very seriously."



5TH Generation Air Battle Management And Why It's Real For Australia By Lockheed Martin Australia

The nature of conflict is becoming increasingly complex and as identified in the Australian 2020 Defence Strategic Update, threats to Australia from air, space, sea, land, and the cyber domain are evolving rapidly. Our security environment is ever changing with militarisation, disruptive technologies, new grey zone threats such as cyber-attacks, coercive use of trade and economic levers and interference operations that make the region less safe. Countries are modernising their militaries and increasing their operational preparedness for conflict. Nations in our region now have advanced capabilities, which bring increased range, speed, precision and lethality. These elements are transforming the characteristics of warfare, and Australia must be prepared for future challenges and embrace 5TH Generation (5TH Gen) advancement.

What Is 5TH Gen And Why Is It Real?

A lot has been written about 5TH Gen warfare since Lockheed Martin coined the term to describe the significant leap in capability associated with the F-22 and F-35. Now 5TH Gen technologies have left the cockpit and are transforming the wider battlespace. In the Air Battle Management environment, put simply, 5TH Gen means the latest technological evolution of aircraft.

Today's challenges to global security aren't just changing – they're accelerating faster than ever before. Australia's response to current and emerging threats requires the modernisation and closer integration of Australian Defence Force (ADF) capabilities. In particular, the Royal Australian Air Force's (RAAF) is undergoing a significant modernisation to achieve a 5TH Gen fully networked force that exploits the advantages of an available, integrated and shared battlespace picture to deliver lethal and non-lethal air power.

5TH Gen In Action

An example of 5TH Gen in action is Lockheed Martin's F-35 Joint Strike Fighter (JSF) with advanced stealth capabilities, speed, agility, sensor fusion, and network-enabled operation. The JSF is supported by the advanced prognostics and logistics systems that

were not possible in earlier combat aircraft that are essential for high tempo operations.

The Aegis Combat System is another example of Lockheed Martin's technology, it is the world's most advanced maritime warfighting capability providing fleet protection and the world's only maritime ballistic missile defence system. "It's designed to take surveillance from a very large area, maintain complete operational domain awareness and be able to rapidly respond," Neale Prescott, Lockheed Martin Australia's Business Development Director said.

Our global surveillance and response for missile defence, Command and Control, Battle Management and Communications (C2BMC) system is another example which gives commanders at strategic and operational levels an integrated picture of ballistic missile threats across the globe.

Driving Forces Of Change

Technology is a fundamental driving force that is creating and changing the future Air Battle Management (ABM) warfighting environment. Technologies such as the Combat Cloud, Artificial Intelligence, Machine Learning and Advanced Sensor Networks are advancing a new warfighting concept known as Multi-Domain Operations. Essentially these technologies synchronise major systems and data from air, land, sea, space and cyber assets combined to achieve situational awareness of the battlespace.

Along with technology, the threat environment has dramatically shifted, which has increased security concerns in our region because of rapid development technologies such as very fast, long-range missiles. These threats are much more challenging than previous generations because of their speed and range combined with multi-domain effects, which increases complexity of the battlespace. Mr. Prescott acknowledged that "the speed of force that can be applied has fundamentally changed. The introduction of hypersonic threats that can manoeuvre and operate vast ranges changes the way we must think about the future battlespace."

To ensure Australia is equipped to operate in the future threat environment, it is critical



to integrate the data gathered from aircraft, ships to radar systems and satellites then merge it to provide a comprehensive single picture and superior understanding of the battlefield. The apex of this modernisation will be a next-generation joint air battle management system: Project AIR6500 - a joint 'system-of-systems' that will completely revolutionise the way the ADF operates.

Industry Partnerships

"To successfully deliver this advanced system of systems, AIR6500 will need a collaborative approach from industry and academia, drawing on cutting-edge Australian and US technology sourced from a range of industry," Mr. Prescott said.

Lockheed Martin Australia is partnering with industry and academia in a range of areas including electronic warfare battle management, communications, information assurance, systems engineering and passive sensing to realise operations in a future distributed operations environment.

"We are committed to working with like-minded Australian industry partners to elevate the technology base in Australia and to create genuine partnerships to support global supply chains and Australian business growth."

"We have visited every capital city of every state and territory in Australia to engage with industry on AIR6500, and recently hosted a virtual session with our New Zealand industry partners to educate them on how they can partner with Lockheed Martin Australia on AIR6500," Mr. Prescott said.

More Information

For more details about partnering with Lockheed Martin Australia please email us at oaip.lm@lmco.com ②.

Register interest in Project AIR6500 €

To read the latest thought leader 5TH Generation Air Battle Management paper, visit the **RAAF Air Power Development Centre** •



"Today's challenges to global security aren't just changing – they're accelerating faster than ever before."

2020 DTC Member Survey Results

By Vivien Massie, Executive Director Industry Engagement, DTC

The annual Defence Teaming Centre (DTC) Member survey provides the team with a valuable insight on how to better support defence industry.

The year, like for many others has been challenging, creating an opportunity for the DTC to re-think how to do business. The DTC has transitioned all of our member offerings online and have found new ways to provide even more value to both our SA-based and interstate members. We have expanded our training and development offerings to include topics such as Quad Charts and Capture Management, with others such as pricing and export in the planning.

Thank you to those who took the time to complete the survey. Our door is always open to understand more about your business and help you navigate the defence industry.

The results for the survey are used to enhance the DTC's member offerings and influence the future business strategy.

Result Highlights

Over all the survey respondents (>100 from 93 companies) were representative of the DTC membership demographics across company type, company size, membership length, company location, and proportion of defence work undertaken.

Key member offerings that most resonated with the respondents were;

- Advocacy directly to decision makers on behalf of industry to influence policy change;
- Networking opportunities;
- Industry education through industry briefings, e-newsletters, LinkedIn and Defence Business Magazine:
- One on One support from the professional team of staff; and
- Quad Chart Review service.

Respondents recognised the DTC's key differentiators as the level of service and the DTC staff.

Overall, respondents were satisfied or highly satisfied with the service offering of the DTC.

DTC Offerings

The DTC membership is broad and accessed in different ways by each of the members. Business maturity level, experience within the Defence market and place within the supply chain (i.e. Prime, Tier 1 or 2 or SME) influences the support required by each DTC member.

Events with the strongest support by respondents were;

- Industry Briefings
- DTC Defence Industry Dinner & Awards
- BD After Five
- DTC Defence Leaders Breakfasts/Lunches

The services of most value to respondents were;

- Networking & Connecting
- Personalised Quad Chart Feedback
- Defence Industry Leadership Program

A key area for improvement identified in the survey was an appetite to provide better access to events for non-Adelaide based members.

How The DTC Is Working For Defence Industry

The DTC is a strong advocate for the whole the defence industry supply chain. Over the last 18 months, we have engaged with key stakeholders across State and Federal government and Primes. The DTC focuses on **Developing, Connecting and Advocating** for industry by:

- Working closely with SMEs to understand their experience of the Defence Industry
- Providing feedback to State and Federal Government about the challenges faced by SMEs in defence industry
- Working with the Primes to identify how they can better engage with SMEs
- Working with Primes to fill gaps in their supply chain with Australian industry
- Deliver development programs for SMEs to increase competitiveness in Defence Industry and to meet the requirements of government and Primes
- Working one-on-one with SMEs to connect them to defence industry opportunities

Where To From Here?

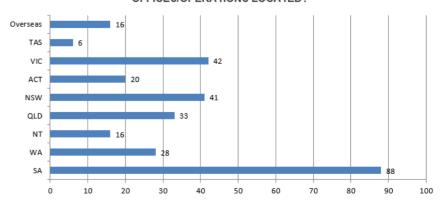
The DTC is continually developing value add offerings for defence industry. The annual member feedback survey shapes where the DTC should focus to align the offerings to meet the expectations of industry. We understand the value that our face-to-face events provide to our members and in the current climate of COVID-19 and are working to continue to provide this value to our members through other means. The DTC board refined the DTC's strategy based on the findings of the 2020-member feedback survey. The updated strategy will be shared with the membership community at the upcoming Annual General Meeting in November.

DTC members can reach out to any of the DTC team, to discuss how to best utilise your membership.

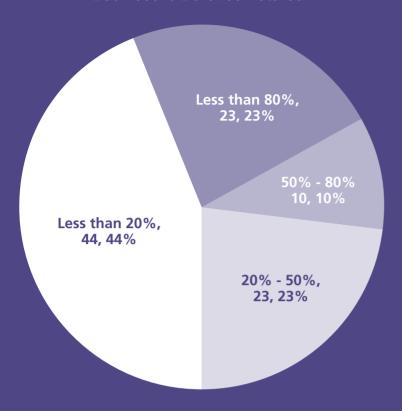
If you are interested in how the DTC can support your business please reach out to **business@dtc.org.au 3** or **visit our website**

The following questions were asked of DTC members.

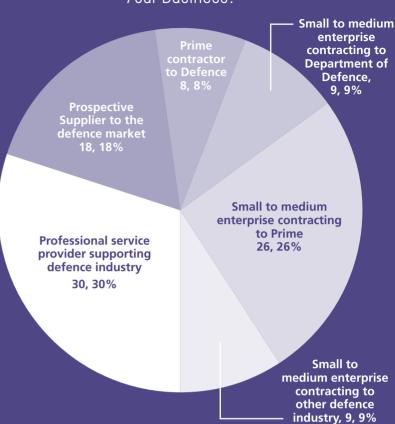
IN WHAT STATES OR TERRITORIES DO YOU HAVE OFFICES/OPERATIONS LOCATED?



Approximately What Percentage of Your Business is Defence Related?



Which of the Following Best Describes Your Business?







AUSTRALIAN DESIGNED & MANUFACTURED SMALL-ARMS SYSTEMS

Firearms

Force Ordnance designs, manufactures and integrates precision firearms for military, law enforcement and government use.

Technological Innovation

With a focus on research and innovation, Force Ordnance delivers cutting edge technologies for the military and law enforcement.

Precision Rifle Optics

Nightforce is a world leader in the design and manufacture of precision rifle optics and Horus Vision develops reticle systems that allow for rapid target engagement.

Close Combat Equipment

Force Ordnance has first hand experience in the challenges the front-line operator faces. Force Ordnance is well positioned to offer a vast array of tactical equipment.

Systems Integration

We are integration experts and partner with other global suppliers of firearms, optics, suppressors and more.

Testing And Evaluation

Our premium systems are used in the most demanding environments. They undergo rigorous testing to ensure reliability.





For the last few decades, Australian sovereign capability has been a large boulder on a slope and Australian industry has been trying to push back. Now, hopefully, the slope may be changing. If we're going to do something, now must be the time to get that boulder moving back up the hill. If we don't, we will be back to where we were. Or worse.

COVID-19 has highlighted the fact that Australia does not have the sovereign capabilities it needs. As a result, governments have been left scrambling.

As a nation we need a sovereign industrial capability and this is becoming more accepted during this pandemic. This fundamental need extends well beyond defence to encompass the basics - such as medical equipment – so that we can deal with crises such as the one we are currently experiencing.

We are overdue for a serious, independent and data-driven review of what those capabilities should be.

For example, what level of economic complexity do we need? Australia sits alarmingly low on the OECD rankings, in terms of economic complexity, and we're not getting any better.

Unless that changes, we are placing ourselves in a very challenging position. When times are tough and defence and a wide range of other sectors are called upon to supply and maintain complex equipment, I fear we are going to be incredibly challenged.

The Spark

COVID-19 needs to be the spark that brings sovereign manufacturing capability back to Australian shores.

However, there is a very real danger that when the pandemic ends, people will revert back to what they were doing before.

If we think of the pandemic as a spark, we know that sparks without fuel sources don't go anywhere. They disappear.

There are worrying parallels between the situation we are in now, and the position we found ourselves in, from a geopolitical point of view, prior to the Second World War.

More and more people are privately voicing concerns about this deteriorating environment but until it starts to become part of the public discourse, we are not going to change things.

So as businesses we need to raise our voices to ensure that governments and industry bodies take action, adding fuel to the fire of this burning need.

People and governments have short memories. In two years, the general attitude to the disrupted supply during COVID-19 will be to say "Oh, that all happened two years ago." So, now is the time.

What Capabilities Do We Need?

Australia requires university-standard research into what sovereign capabilities we need, as well as the level of Economic Complexity we need to be able to sustain. This research needs to be independent, so sectors and interest groups cannot feather their own nest.

Nations all over the world - in Northern Europe, Europe and the United States in particular - maintain strong levels of sovereign capability. They sustain economic complexity and have deep capability for onshore design and manufacture.

Australia has fallen way behind. The truth is that we have been the "lucky country" and we got away with it thanks to our iron ore, agriculture and other commodities that have supported the Australian economy.

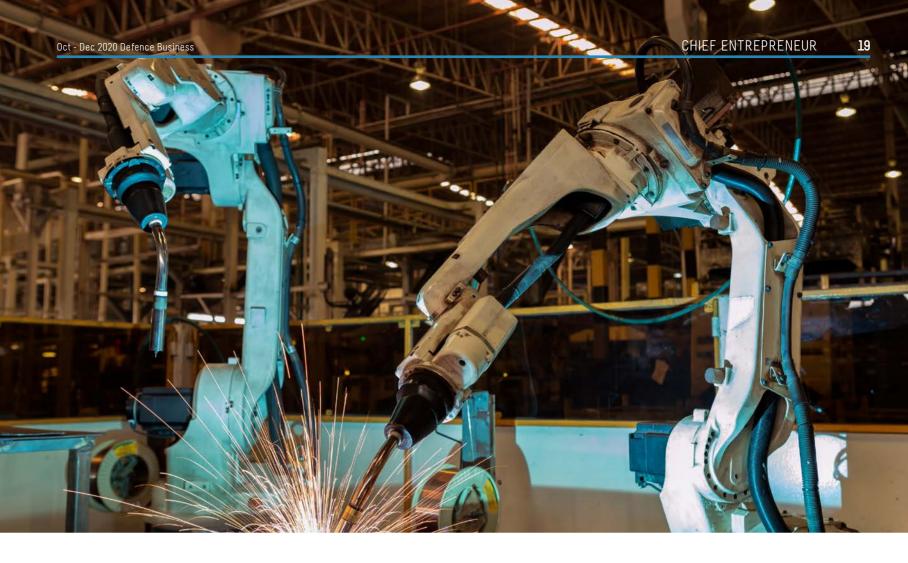
COVID-19 has been a wake-up call. We need to be investing some of the riches from our good fortune in commodities, into capabilities that revolve around future industries that will provide other avenues of income for the nation.

Contract Advantages For Entrepreneurs

Entrepreneurship will play a pivotal role in this new future.

We need to support our startups, particularly those in future industries such as defence, digital, space, creative industries, biotech, renewables and so on.

Australia needs to be giving them opportunities, in particular a modicum of help to win contracts. They have to compete but we also need to understand that unless we



provide them a little bit of assistance on the way, we're not going to have an industry to compete with others.

The consequence of that void is that we will be price takers, not price makers.

As an example, look at Southern Launch which is trying to develop a launch capacity in Australia. If we want to have a responsive space capability for defence purposes, we've got to make sure companies like Southern Launch and Inovor succeed. The alternative is to ring up our allies, ask for satellite time and join the queue!

"An entrepreneur wants a client more than he or she wants a handout."

There is a long history of this unhealthy dependence on others, dating back to the Vietnam War. Our history is littered with contracts, where the IP has not come as part of the package. Where we have been unable to modify aircraft and systems.

Something needs to get done, and needs to get done rapidly because we're investing huge sums into these contracts and we build brake pads and things like that for complex systems, but we don't do the complex system stuff.

Australia's tech-inspired entrepreneurial community is as capable as anywhere in the world.

What they lack is a marketplace in their own home - and it is challenging for these startups to operate overseas.

There are those who say we should simply insist on a level playing field. Well, let's make sure it is actually level, not sloped against us.

Look overseas and you will see that startups are the beneficiaries of government money.

The Australian government is supporting entrepreneurship and innovation – but these star companies of the future need more than grants in their early stages.

They need clients

An entrepreneur wants a client more than he or she wants a handout. So, we need to see governments embracing entrepreneurial companies, embracing their technology, and looking at ways that they can be customers for them, as opposed to just handing out cash and then leaving them.

There is a strong argument that innovative Australian companies in their early years should be able to bypass the normal compliance and procurement rules, like three-year trading history, a strong balance sheet, organisation size and so on.

I am not saying that we should allow them to shortcut the system or undermine the integrity of our systems.

But let's give organisations with good ideas the ability to get government work. The benefit will be that they make government more efficient, more effective and more customer focused.

GoToGov

The South Australian Government's new GoToGov program is an opportunity for startups to pitch to the state government, which is the largest business in town.

They will now get opportunities to display their wares and services, and hopefully get government contracts.



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Team.ex



Insights From Across The Country Inform Export Hub Strategy

Experts representing a broad cross-section of industry, government and academia from across Australia have convened in Adelaide and via video conference to provide insight into on the strategy for the DTC's recently formed Export Hub.

The Hub, which at its core will deliver an eight month Executive Education program, will be known as Team.eX.

Why A New Program?

"For companies that operate in the defence industry, domestic and international opportunities are vast," said General Manager, Team.eX, Emilio De Stefano.

"The DTC recognises that companies who wish to take advantage of these opportunities need to be supported and equipped to do so effectively.

"I'd like to thank all those that attended, including our Foundation Partners. It was fantastic to have such breadth of knowledge and experience in the room and online. We look forward to sharing more about the Team.eX program and the benefits it will afford industry later this year, before our official launch early in 2021."

The **Australian Defence Export Strategy** tetails how the Federal Government will create an environment to improve industry access to export opportunities. It is up to industry however, to take the commercial initiative to develop them, make the investment decisions, and pursue export success.

The Team.eX program will provide support and development to companies to capitalise on defence sector global supply chain and direct export opportunities. The industry focus of this initiative will be advanced manufacturing and cyber security SMEs. The Team.eX program will provide the education, tools and one to one support to effectively bring SMEs together to achieve the increased capacity and capability often required to achieve export success.

Communications partner Fuller Brand Communication led the interactive session which considered the Team.eX branding, target audiences, value proposition, business model and more.

Leveraging existing intellectual property developed by the DTC and project partner Knowledge Perspectives, the project will be delivered in partnership with a national network of organisations. These include industry growth centres, industry academia and government agencies and will provide specialist education on how to make the most of collaboration and teaming to overcome traditional barriers to export.

What Will The Team.eX Program Consist Of?

The Team.eX program will be delivered via a blended approach that includes a combination of:

- face to face workshops
- online course modules
- a teaming toolkit consisting of legal templates for teaming written in plain English
- one to one facilitation, export coaching and legal advice
- market research / intelligence
- access and participation in an online collaborative community
- impact groups intimate teams of CEOs and senior leaders who meet regularly to fast track success.

These services will be provided to support the implementation of teaming arrangements which ultimately increase the likelihood of export success.

You can find out more information about the Team.eX program and register your interest to ensure you're kept abreast of updates at **teamex.org.au 3**.

This program has received grant funding from the Australian Government's SME Export Hubs Initiative.



Senior representatives from industry, government and academia meet at Lot Fourteen in September to provide insight and input on the strategy for the DTC's Export Hub.

Foundation Partners













Another First For TQCS International



TQCS International (TQCSI) has become the only Australian certification body to be awarded accreditation to the AS 9100-series quality standards for defence, space and aviation organisations.

The result is that, for the first time, Australia's defence and aerospace companies can use an Australian company to achieve the highest quality management system certification.

A DTC member, TQCSI opened its Adelaide operations in 1995 to meet demand from South Australian businesses for a local, customer-focused certifier. The company was formally accredited by the international regulator, Joint Accreditation System of Australia and New Zealand (JAS-ANZ) in 1996 and commenced international operations in 1999

International Expansion

TQCSI is now the largest JAS-ANZ accredited certification body in the world, operating throughout Australia, the Pacific, Asia, the Middle East, Europe and Africa. With offices in over 25 countries, it operates in over 40 countries and services over 10,000 certificates.

Head office remains in Adelaide and the organisation's focus remains fixed on servicing Australian industry.

TQCSI also offers certification to over 20 other internationally recognised standards, including:

- Quality (ISO 9001)
- Safety (ISO 45001)
- Environmental management (ISO 14001)
- Asset management, business continuity, risk management and information security (ISO 27001).

ISO 27001 is currently one of the fastest growing standards and rapidly being adopted across defence and government contracts and organisations.

Craig Bates, TQCSI's Managing Director, said exorbitant high costs, inflexibility of auditors and certification delays due to liaising with certification bodies in other countries and time zones, have traditionally plagued the AS 9100-series industry.

"Hearing the complaints being made by Australian businesses, TQCSI saw it as our duty to bring this sovereign capability to Australia," he said.

"So we entered an intensive period of investment, process development and training in order to enable TQCSI's team of highly experienced auditors to deliver the rigorous

standards demanded by the defence and aerospace industries.

"TQCSI now has more Australian AS 9100-series Aerospace Experienced Auditors (AEA) on staff than the rest of the market combined, and full-time staff based in Adelaide, ready to liaise with potential clients."



Growth Focus

Since entering the AS 9100-series market in April 2020, TQCSI has already grown the market by 5%, and is committed to making the standard more available to Australian businesses who wish to operate in defence industry.

TQCSI has also been supported by the Centre for Defence Industry Capability (CDIC) via a Sovereign Industrial Capability Grant to develop this new sovereign capability in Australia.

"We are very proud to have achieved this sovereign capability for the Australian defence, space and aviation markets, following an intensive year of effort to ensure our systems and people can deliver the exacting quality standards that are demanded," Sean Moules, TQCSI's Program Director, said.

As a 20-year naval veteran, Craig added: "We look forward to providing these new certification standards to our growing customer base and to continue to grow and evolve TQCSI to meet customer demands and deliver the most professional certification services in the world. I am particularly proud to be able to further service the defence industry, after a previous career in uniform"





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ITAR And Your Workforce: The Fair Work Commission Overturns ITAR Dismissal

By Erin McCarthy, Partner, and Emily Haar, Senior Associate, Specialist Employment Lawyers at Piper Alderman

In August, the Fair Work Commission handed down a decision which has significant consequences for the defence industry and for organisations seeking to work on defence related projects.

Organisations who undertake work using defence technologies are obliged to comply with a range of requirements set by Australian and international governments. In particular, organisations performing work that could be connected with the United States of America, or their technology, can be subject to the International Traffic in Arms Regulations (ITAR). The ITAR imposes strict requirements about to whom particular technology or information can be disclosed. An organisation will be in breach of the ITAR (and subject to significant penalties) if persons with known connections or allegiances to proscribed nations have access to regulated items or information.

While ITAR compliance has long been a feature of traditional defence companies, ITAR creates unique challenges for organisations that perform both defence and non-defence work. This can arise both in the context of engaging new staff but also in managing existing employees who might work across both defence and non-defence projects.

The recent case of Chivonivoni v Cobham Aviation Services Engineering Pty Ltd [2010] FWC 3568, illustrates the competing interests at play in managing international ITAR compliance and Australian employment law obligations.

The Facts Of The Case

In 2019, Cobham commenced an internal program to audit and enhance ITAR compliance. In doing so, one of their existing aircraft engineers was identified as a medium to high risk of breaching ITAR. This was because he was a dual Australian-Zimbabwean citizen, and Zimbabwe is one of the proscribed nations for the ITAR. The evidence before the Fair Work Commission was that the employee had worked in the role as a labour hire employee since 2014 before being directly employed in 2018.

When the employee declined to revoke his Zimbabwean citizenship, and alternative duties that did not require ITAR compliance were unable to be found, Cobham terminated the employment on the basis that he could not meet the inherent requirements of his role, because he could not ensure compliance with the ITAR.

The termination was challenged in the Fair Work Commission under the unfair dismissal provisions in the *Fair Work Act 2009* (Cth). A key consideration in that jurisdiction is whether there was, objectively, a valid reason for the termination. Deputy President Anderson determined that there was no valid reason for the termination and ordered the employer to reinstate and back-pay the employee.

The Fair Work Commissioner's Consideration

The Commissioner did not consider ITAR compliance in and of itself to be a valid reason for the termination of an employee and placed significant weight on whether the employer had considered all of the options available to it, as an alternative to dismissal of the employee.

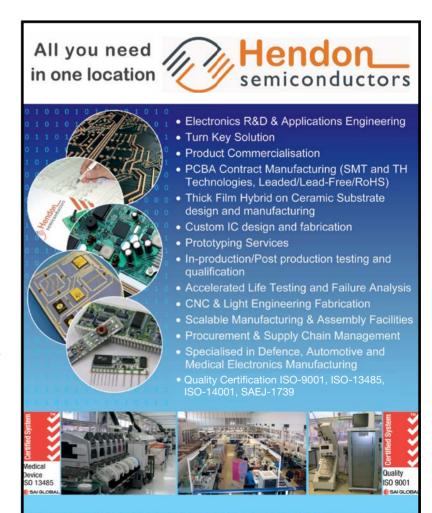
There is an exemption within ITAR for employees who are dual nationals of proscribed nations where the organisation conducts "screening for substantive contacts", so as to identify and prevent the risk of any diversion of US export controlled technology and goods.







Erin McCarthy, Partner



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Cobham undertook a screening process in this case, to consider Mr Chivonivoni's level of "contact" with Zimbabwe's government. The employee advised that:

- he had relatives who potentially worked for government departments as teachers or nurses, but that he did not know for certain, because he left the country in 2012 and had not returned
- he had an uncle who worked in the Ministry of Education, but he did not know if he still worked there
- he occasionally spoke with parents and siblings who still live in Zimbabwe and
- he had no property in Zimbabwe, though he owned a flat in South Africa.

Cobham had concluded these factors indicated substantive contacts with Zimbabwe. The Commissioner disagreed, finding that the level of contact Mr Chivonivoni had with Zimbabwe was "unremarkable".

The Commissioner also concluded that Cobham could have, instead of terminating the employment, alleviated the risk of breaching the ITAR by asking Mr Chivonivoni to enter into a Non-Disclosure Agreement. (Though it is worth noting that this may not always be an appropriate method of managing the risk.) The Commission said that the ITAR did not operate as an absolute bar to any dual citizens of proscribed nations from being able to work for defence-contracting organisations like Cobham.

Finally, the Commission concluded that the fact that Cobham had an exemption from equal opportunity legislations allowing it to discriminate on nationality grounds, was not relevant to the issue of whether there was a valid reason for the dismissal of an existing employee.

Key Takeaways

The outcome of the decision seems to be at odds with the significant weight placed on ITAR compliance in the defence industry. The decision highlights the tension between stringent international obligations and the Fair Work Act's focus on fairness to an individual employee.

"A key consideration in that jurisdiction is whether there was, objectively, a valid reason for the termination. Deputy President Anderson determined that there was no valid reason for the termination and ordered the employer to reinstate and back-pay the employee."

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While each case will turn on its own facts, for organisations where ITAR compliance is required it is important to:

- Ensure that ITAR compliance is incorporated into recruitment processes given that different considerations will arise in recruitment as opposed to possible termination of an existing employee
- Incorporate ITAR compliance obligations into contracts of employment
- If an ITAR issue arises with an existing employee, it is important to consider
 any possible exemptions including assessing the real level of "contact" with a
 proscribed nation, remembering that the mere fact of citizenship may not be
 sufficient to warrant intervention to comply with the ITAR
- bear in mind that any discrimination exemptions applying to the organisation will not render an otherwise "unfair" dismissal into a fair one for the purposes of the Fair Work Act; and
- seek specialist legal advice to ensure that any ITAR related employment changes are consistent where possible with the Fair Work Act.



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From Teaming To Profits: One Potential Journey

By David Pender, Principal of Knowledge Perspectives and a senior lecturer at the Adelaide Business School.

In 1987, Martin Marietta Astronautics (MMA), which later merged with Lockheed to form Lockheed Martin, won a contract to produce 108 instrumentation and flight safety systems for the US Air Force Peacekeeper missile. A triumph for MMA in all respects but one – in house estimators analysed the US\$200 million project and forecast a US\$19 million overrun (1987 dollars). MMA would have to share those overrun costs with the US Defense Department.

By 1989, that cost overrun had turned into an underrun of US\$33 million in 1989 dollars (sourced from the US Congressional Record), a 36% turnaround. In 2020-dollar terms, that was a turnaround of around US\$160 million (or about A\$225 million). That underrun would also be shared with Defense.

So, how did MMA achieve that spectacular turnaround in such a short period of time? What operating innovations were needed to produce such an outcome?

Yes, they introduced quality improvement systems, worked for faster cycle times and introduced the concepts of high performing, empowered teams. They all contributed to MMA's success. But the real finesse came from developing new, collaborative relationships with their key suppliers and redesigning their entire supply chain workflow as a single system.

New Collaborative Relationships

MMA traditionally used a bottom up aggregation method where adding the individual pieces produced the cost, schedule and quality outcome of the whole project. They realised that they needed to get their suppliers to work with each other and with them, designing their work together, collaborating at each stage and working in a new and different way, even moving some work away from one of their own group companies to achieve the outcomes they needed. MMA prototyped processes with their partners and allowed each other unprecedented access to their innovations. Each party benefited (together) from the others' experiences.

John Parker, the MMA manufacturing manager at the time said that instead of the usual contract negotiations with suppliers, it was more like 'do you want to play with us?' They found new ways of working together and, at the same time, preserving the intellectual property of participants.

Workflow As A Single System

One critical success factor came from redefining the 'boundaries' of MMA's manufacturing system. Rather than treating MMA and each contractor separately (and keeping the 'hard' boundaries between them), they treated the entire workflow as a single, integrated system making the interfirm boundaries as 'soft and fuzzy' as practicable. Personnel were cross-deployed as needed, procurement centralised and some information systems opened up. New knowledge developed in one part of the chain was immediately shared across the entire chain. As a result, cycle times plummeted and became best in the industry with the expected productivity gains and a reduction of 75% in manufacturing defects. MMA and all of their participating contractors harvested the benefits that had been generated.

A Roadmap For SMEs

Are there lessons from 30 years ago that we can apply today? Certainly.

Over the past 15 years or so, my research has confirmed exactly what MMA found:

- considerable, but hidden cost is incurred at the 'traditional boundary' between firms in a supply chain or network; and
- treating the supply chain or network as a single, open and integrated system allows for competence, knowledge and work reconfigurations between firms in such a way that often produce startling benefits to all involved.

The lessons from MMA and the research can be applied in a four step process.

Identify. Start off by looking at the supply chains that you are involved in. Who are the customers, the suppliers, the peers, the competitors? Who are the thought leaders in that group of companies?



Envision. Start to develop an idea of how the supply chain could be transformed to fiercely compete with the 'best' that might be pitted against you.

Team. Bring those thought leaders together and workshop your idea and theirs. Develop shared meaning of what could be achieved. Assert your own needs, but be willing to engage with the others to understand theirs. The outcome is a vision of how, between you, you can excel and be different in your chosen area. Using a facilitator here will improve your outcomes as you will keep on the 'big picture' and not get so lost 'in the weeds'.

Prototype. Experiment with new processes and ideas with the group. Look at what could happen if you made the company boundaries 'fuzzier'. What costs could be eliminated? What cycle time, productivity and quality gains could be achieved if you applied kaizen and value stream mapping principles across the entire value chain? What benefits would common knowledge and experiences deliver if this chain were treated as a single system, rather than be kept as strictly separate components? What is the new story that you can tell together?

Keep iterating the envisioning, teaming and prototyping processes – as you discover different ways of thinking and doing things, so you continually discover more. It might be that you find you have to expand the scope to include more visionary partners in your efforts.

Continuously share and document what you have found. Never forget that the knowledge you create here is one of the most valuable outputs of the endeavour. It can be reused over and over again. Establish some simple governance rules around how you are going to continue to work together. Agree how risks and rewards will be shared when you 'go live and step into the game'.

You do not have to wait for a contract in the defence industry to exploit the benefits of this approach. Apply them to your current business contracts, practice and see the improvements. Defence industry contracts in the future will also benefit. For those who think a little more broadly, these principles can lead to improved success in export markets. These are the principles that will be explored by participants in the DTC's new Team.eX program teamex.org.au .

WATCH THE LAUNCH HERE





Concluding Thought

MMA were able to engineer a dramatic turnaround on the Peacekeeper missile project. Those benefits were shared with their customer, Defense.

In 2020 Australia, what might be done with the identified benefits? Well, they could reflect a price reduction in project cost that would make your joint proposition even more appealing. They could be reflected in deeper profits for the participating members. Or, they could be used for joint investment in extending competencies and capabilities. Most likely, it would finish up being some combination of those.

Primes and Tier 1 companies will see the complexity reduction in the supply chain improvements you have been able to generate. The process I have described also provides continuing evidence of the business maturity the participants have developed and the reduced operating risk of dealing with them.



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Australian Company Takes Virtual Training To New Heights

With businesses and universities facing massive challenges from restrictions caused by the COVID-19 pandemic, an Australian company is pioneering unprecedented use of virtual reality to enable real-time training activities to continue in unique and enhanced 3D environments.

During pandemic times, social distancing and lockdown restrictions, we are all, in some ways, trying to find a good way to communicate, educate ourselves and work remotely. Online video conversation tools like Zoom and Skype have, as expected, experienced a huge increase in usage worldwide in the past few months.

However, video conferencing programs are not the only tools that can be use during this tough time as a mean of remote communication. Other emerging technologies like virtual and augmented reality can bring people together at a whole new level, while still respecting social distancing.

HYDAC Australia, a leader in fluid power technology, has partnered with Deakin Motion Lab to create a stunning virtual training environment that overcomes geographic barriers and coronavirus social distancing requirements.

The virtual reality training technology brings together students and trainers from across the country, all interacting in real-time in the same virtual space.

The cutting edge technology allows for the first time, the unique possibility for students and trainers all to be in different locations, and virtually come together in a bespoke virtual training space. It allows direct interaction with the equipment, real time instruction, feedback, verification of skills and more.

The topics in the VR training are related to hydraulics, electro-hydraulics, hydro-pneumatic accumulators and thermal optimisation; but the main focus is on workplace safety. Students have their training experience in a total 3D environment; the training uniquely allows and simulates hazardous events that would be impossible to demonstrate safely in real life.

They can also perform tasks as they would normally do if they were on the real machine, such as change a hydraulic filter and check the pressure of a hydropneumatic accumulator.

When performing these tasks, they have a full assistance of a professionally qualified technical trainer. Students also have several resources available that they can access virtually, like videos, technical information and some mechanical tools. The trainer can also simulate faults on the system as a topic of discussion among the students.

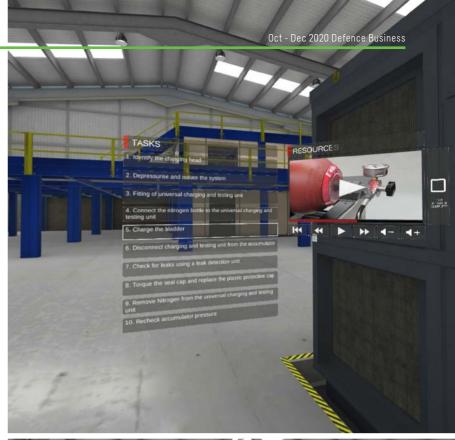
The unique possibility to educate, teach new skills and verify safe working practices for workers at home or located in different geographical locations, means training can continue and even be improved in this travel and distance restricted time.

By preparing workers for new equipment, upskilling and skills refreshing for fly in fly out workers, with the trainer located in one place, each student can access the training from basically anywhere; and they all meet together in the same virtual environment. Everyone (students and trainer) can hear and interact to each other in real time. The learning experience and retention of knowhow from this training greatly exceeds any standard training method and the "experience" is more exciting and memorable.

The same remote capabilities of the training are also welcomed in workplace meetings.

"This is fantastic use of technology to enable businesses and educators to continue their training regimes safely through the current COVID-19 restrictions. But it is also the way of the future," said HYDAC Australia Managing Director, Mark Keen.

While the technology currently enables complex practical education in engineering facilities, HYDAC's virtual training can be designed to create bespoke training experiences that can benefit a wide range of educational institutions, organisations and businesses









Oct - Dec 2020 Defence Business OSBORNE 27

Osborne Shipyard Completed

SA's world-leading shipyard at Osborne South is now complete and ready for handover, heralding the beginning of another local jobs boom with the commencement of the \$45 billion Hunter Class Frigate program.

Prime Minister Scott Morrison said around 2,500 direct jobs would be created under the new Frigate program, which now starts in December when the first steel is cut for prototyping.

"Our continuous naval shipbuilding program has changed the skyline at Osborne on the Port Adelaide River but importantly it's delivering thousands of local jobs while boosting the economy and strengthening Australia's defence capability, the Prime Minister said.

"Founded on a \$535 million investment by the Australian Government, Osborne South is now a world-leading shipyard where Australian steel comes in at one end, and state-of-the-art warships come out at the other."

"I commend South Australia for the way in which they have managed COVID-19, particularly for keeping vitally important projects like Osborne on track and on time throughout the pandemic, providing a major boost to the local economy but also to the defence of Australia.

"As part of the our 2020 Force Structure Plan, we are now progressing the build of 23 naval vessels in South Australia, which will support the creation of more than 5,000 direct jobs, including 12 regionally superior Attack Class submarines, 9 anti-submarine warfare Hunter Class frigates, and 2 Arafura Class Offshore Patrol Vessels.

Minister for Defence, Senator the Hon Linda Reynolds CSC said while the Navy's nine Hunter class frigates were being built in South Australia, there would be significant opportunities for industry across the country.

"This program is the cornerstone of this Government's continuous Naval Shipbuilding Program and will provide our nation with the most advanced anti-submarine warships in the world," Minister Reynolds said.

"The breadth and scope of building frigates here in Australia with Australian steel provides enormous opportunities for Australian businesses, creating thousands of Australian jobs.

"Already this year we have signed contracts for steel, we've engaged industry to provide Australian supply chain solutions, we're skilling workers through the Diploma of Digital Technology and ASC Shipbuilding has welcomed their first intake of 18 apprentices.

"Looking ahead, ASC Shipbuilding will continue to increase Australian industry content in the Hunter Class Frigate Program in the lead up to prototyping, demonstrating our



commitment to creating a skilled Australian workforce."

Finance Minister Mathias Cormann said Australian Naval Infrastructure had constructed the new facilities at Osborne on time and on budget – delivering on the Government's ongoing commitment and progress towards creating a sovereign continuous naval shipbuilding program, generating secure employment for Australian shipbuilding for generations to come.

"More than 25,000 tonnes of steel, of which over 85 per cent was locally made here in SA, was used during the build.

"At peak construction, more than 730 people worked on this project, with 97 per cent of contracts let to Australian businesses, making this a truly sovereign project." Minister Cormann said

Senator for South Australia and Minister for Trade, Tourism and Investment Simon Birmingham said this was a significant milestone in South Australia's shipbuilding history.

"This is another step forward as South Australia emerges as a powerhouse in the building of ships and subs for our defence force," Minister Birmingham said.

"This incredible new facility will be the centre of Australia's largest ever shipbuilding program and the centre for thousands of new jobs for South Australians."

Over the next four months, ASC Shipbuilding will take control of the shippard and start training their shipbuilders on the technology that has been installed for building warships efficiently and effectively.

Construction of the first of nine Hunter class frigates is expected to begin on schedule in late 2022. This ship is expected to be delivered to Navy in 2029.

The ninth and final Hunter class frigate is expected to be delivered to Navy in the mid-2040s.





28 BOEING Oct - Dec 2020 Defence Business

Team Boeing Zooms Into Queensland Classrooms To Teach Future Aerospace Leaders



Year 12 students with big dreams of becoming a pilot or aircraft engineer are flying high, thanks to the Boeing-led virtual teaching of the new aerospace systems syllabus in Queensland.

In an innovative learning model to connect schools and industry, up to 100 aerospace systems students in seven Aerospace Gateway schools, were recently instructed on the effects of flight on the human mind and body by Boeing Defence Australia (BDA) experts.

BDA's intrepid teachers included Ben Wenban, a current helicopter pilot; Mike Prior, a former Classic Hornet pilot and fighter combat instructor; David Jackson, a former commercial pilot; and Duane Davis, a former air traffic controller.

Over five weeks, the Boeing experts united with aerospace teachers via Zoom and Microsoft Teams to educate the students on the new Human Limitations and Performance aerospace subject.

Participating schools included Mueller College in Rothwell; St Patrick's College in Mackay; Iona College in Lindum; Coolum State High School; Miami State High School; Townsville State High School and Aviation State High School, Clayfield.

Ben Wenban, Aircrew Training Capability manager, Helicopter Aircrew Training System program, was thrilled to be able to directly connect with students and teachers to impart invaluable, real-world learning.

"This has been a fantastic experience. I feel fortunate and honoured to have been able to share my knowledge and experience with students who are interested in the world of aviation," Wenban said.

The students were in high praise for the Boeing team, relishing the real-world learning

Boaden Giuca-Segal, 17, from Townsville State High School, who dreams of becoming an engineer, said: "It was very inspiring and has opened my eyes to more of the opportunities in the aviation industry."

And Mueller College's Elika Akl, 17, and Ramia Jazdan, 18, concurred.

Elika, who wants to become a Royal Australian Air Force fighter pilot or engineer, said: "Listening to the pilots talk to our class was a really great experience – we learnt all about human factors and the challenges that face the pilots, as well as engineers and other personnel who design the cockpits."

Ramia, whose ultimate ambition is to either become a pilot or a mechanical engineer, added: "It was an awesome experience to get the two pilots to teach us all about the human factors affecting the performance of the aircraft. One other cool thing we learnt is the effect of g-force on the performance of the pilots during flights. I really appreciate their efforts in teaching us all about it."

Boeing was a founding member of the Aerospace Gateway to Industry Schools program established in 2004, which runs across 18 Queensland secondary schools, helping to create sustainable career pathways into the aerospace industry. Visit aerospacegatewayschools.com.au ②.

"In an innovative learning model to connect schools and industry, up to 100 aerospace systems students in seven Aerospace Gateway schools, were recently instructed on the effects of flight on the human mind and body..."



How To Negotiate A Commercial Lease

By Ryan Stewart, Director, Broadway Property

Negotiating the commercial lease for your company's premises is probably not high on your priority list, given everything else you must do every day.

But the outcome you get for your commercial lease will have a material impact on your business, whether you like it or not, for better or worse.

Are you negotiating with your landlord? Here's some key considerations to get the best possible outcome and protect your company's interests.

It All Starts With Strategy

Much like your business plan, cash flow and marketing, strategy is key to a successful outcome with your commercial lease. It is important to align your commercial lease strategy with your business goals. And one of the biggest considerations is the time factor. You may need to develop your strategy with a two to three-year outlook, making sure you plan for expansion, which may require other locations or alternate facilities. Being future focused is even more important if there's a chance you may need a brand new or unique facility - this in itself could be a process that takes two years or so to develop.

Prepare To Negotiate Lease Terms

The monthly rental cost isn't as concrete as you might expect. With careful negotiations, you may be able to get some sort of incentive or discount from the landlord for agreeing to a longer term. On the other hand, your rent could go up over time the longer you agree to stay there. You can try to protect yourself from sudden cost jumps by stipulating in the lease exactly when the rent can go up and by how much.

Discuss Your Fit Out Plans And Needs

Don't forget that you'll likely incur a lot of expenses while fitting out the new property to suit the needs of your company. This is another critical matter to talk about with the landlord and include in detail in the lease.

Your landlord would likely be happy to negotiate to help you afford those costs. For example, perhaps you could get access to the property to fit it out before the lease term starts. Your landlord might offer to cover the costs of the fit out. Alternatively, you might negotiate for a discount or a few months rent-free while you put money towards getting the property in shape for your business. Whatever arrangement you agree on, make sure it's in writing in your lease.

You'll want to ensure that you also have written permission to complete the fit out. And if the landlord will require you to make other changes to the property whenever you vacate it (such as special cleaning procedures or new paint or flooring), then make sure the lease states who will be responsible for those expenses.

Security

It is important to be clear about what level of security your property will require, especially for businesses operating in the defence supply chain. This could be a critical factor in your choice of property, and whether you decide to stay in your current premises or look to alternatives. There may also be significant cost factors to consider as part of this process.

Leave Room To Move

Be careful that the lease doesn't place any unreasonable limits on what your company can do. For business growth purposes, you may need to sublease to other individuals or add new staff and services. You might have to change up your operations or layout many months or years after you sign the lease. So, make sure that your lease leaves some room for those changes.

If there's a clause in your lease that dictates the permitted use of the premises, try to negotiate that aspect to keep it as broad as possible.

Keep Track Of Key Dates

Every lease will have key dates and time periods that you will need to be aware of, and among the most important is the period required to exercise your renewal option.

This is an essential part of managing and executing your strategy timeline effectively, ensuring there won't be unnecessary time and cost risks to your business.

Build A Trusted Network Of Experts

Consider building an expert team to not only ensure you get the best results, but also minimise stress and extra costs along the way.

This could include an independent commercial property advisor and an architect or designer to ensure your accommodation brief is clearly defined and fulfils all requirements, along with a trusted lawyer and accountant.

Get Informed

As you can see, there's a lot for you to get your head around! Take your time, don't make rushed decisions and get informed.

This is where it is key to get advice from experts who understand the market, the risks and the fine print, and can not only advise you but also negotiate on your behalf. When you get advice, always work with an independent expert who doesn't have a conflict of interest in your deal.

And finally, before you sign off on the lease, make sure a professional does a final check on the terms of your agreement to make sure everything is finalised in accordance with what has been negotiated.

Visas, Immigration, Travel Ban Waivers And COVID-19

By Mark Glazbrook, Migration Solutions

Running South Australia's largest migration advisory firm has had its ups and downs over the past 19 years, but COVID-19 is something completely different again. The GFC and significant immigration reform in 2012 and 2017 have taught us to be extremely agile, they were great lessons to help us adapt and make changes to our operational structure like so many companies and businesses have had to do. Running a migration company with closed international borders is certainly challenging and with many potential vaccines being at least 6-12 months away, it's likely that international travel restrictions and social distancing measures will not return to any sort of pre-COVID levels until 2022.

"Running a migration company with closed international borders is certainly challenging..."

Many businesses have critical roles that must be filled in order to address current and future workforce needs. Fortunately, the Federal Government have announced critical sectors where it is possible to obtain travel ban waivers, which will assist with visa processing in the Department of Home Affairs.

Migration Solutions continue to assist clients both existing and new, in critical and not critical industries with visa applications and travel ban waivers. Where a client is from a non-critical industry, and we can demonstrate a need, it is possible for the person or persons to enter Australia with the right letters of support.

Information published on the Department of Home Affairs website for those seeking a travel ban waiver states:

Individual Exemptions

The Commissioner of the Australian Border Force may grant you an individual exemption if you are:

- a non-citizen travelling at the invitation of the Australian Government or a state or territory government authority for the purpose of assisting in the COVID-19 response
- providing critical or specialist medical services, including air ambulance, medical evacuations and delivering critical medical supplies
- a non-citizen with critical skills or working in a critical sector in Australia
- a non-citizen sponsored by your employer to work in Australia in an occupation on the Priority Migration Skilled Occupation List (PMSOL)
- a non-citizen whose entry would otherwise be in the national interest, supported by the Australian Government or a state or territory government authority



- military personnel, including those who form part of the Status of Forces Agreement, Commonwealth Armed Forces, Asia Pacific Forces and Status of Armed Forces Agreement
- travelling for compassionate and compelling reasons.

Travel Exemption Requirements For Individuals In Critical Sectors Or With Critical Skills

In addition to the above, the Commissioner of the Australian Border Force may grant an individual exemption if you are a non-citizen:

- with critical skills required to maintain the supply of essential goods and services (such as in medical technology, critical infrastructure, telecommunications, engineering and mining, supply chain logistics, agriculture, primary industry, food production, and the maritime industry)
- delivering services in sectors critical to Australia's economic recovery (such as financial technology, large scale manufacturing, film, media and television production and emerging technology), where no Australian worker is available
- providing critical skills in religious or theology fields

You must hold a visa and an exemption to Australia's travel restrictions before you travel. You can request an exemption online and must provide appropriate evidence to support your claims. Requests may be finalised without further consideration if insufficient evidence is provided. All documents need to be officially translated into

You Need To Apply For An Exemption For At Least Two Weeks, But No More Than Three Months, Before Your Planned Travel

Your request must include:

- traveller details: name, date of birth, visa type and number, passport number
- proposed residential address and phone number in Australia
- your reasons for coming: why you should be granted an exemption
- a supporting statement: setting out how you meet one of the grounds for an
- accompanying evidence.

If you are not granted an exemption, you should not continue with your travel plans, as you will not be permitted to board a flight to Australia. If you are granted a travel exemption, you need to take evidence of that exemption decision to the airport.



All travellers arriving in Australia including Australian citizens, are subject to mandatory quarantine for 14 days at a designated facility, such as a hotel, in their port of arrival. See Coronavirus (COVID-19) advice for travellers. You may be required to pay for the costs of your quarantine. To find out more about quarantine requirements, contact the relevant state or territory government health department.

Visa applications and travel ban waivers are now very much a combined process, you can't get one without the other

To date, Migration Solutions has successfully obtained close to 50 travel ban waivers in the Defence, Health, Sport, Agriculture, Food Processing and Electrical Trades. We have also assisted many Australian citizens and residents with applications to

Whilst the application process for obtaining a travel ban waiver is not always easy, it is not impossible. It is important to understand what is required and to submit all the necessary documentation with the waiver request. This is particularly important when trying to recruit internationally to address: current or future workforce needs; if requiring service technicians from overseas for the delivery or commissioning of new technology, machinery, plant or equipment; or to transfer specialised skills and knowledge to local workforce

As a proud member of the DTC for 15 years, Migration Solutions is happy to discuss visas and travel ban waivers with other DTC members as a complimentary service.

"If you are not granted an exemption, you should not continue with your travel plans, as you will not be permitted to board a flight to Australia."



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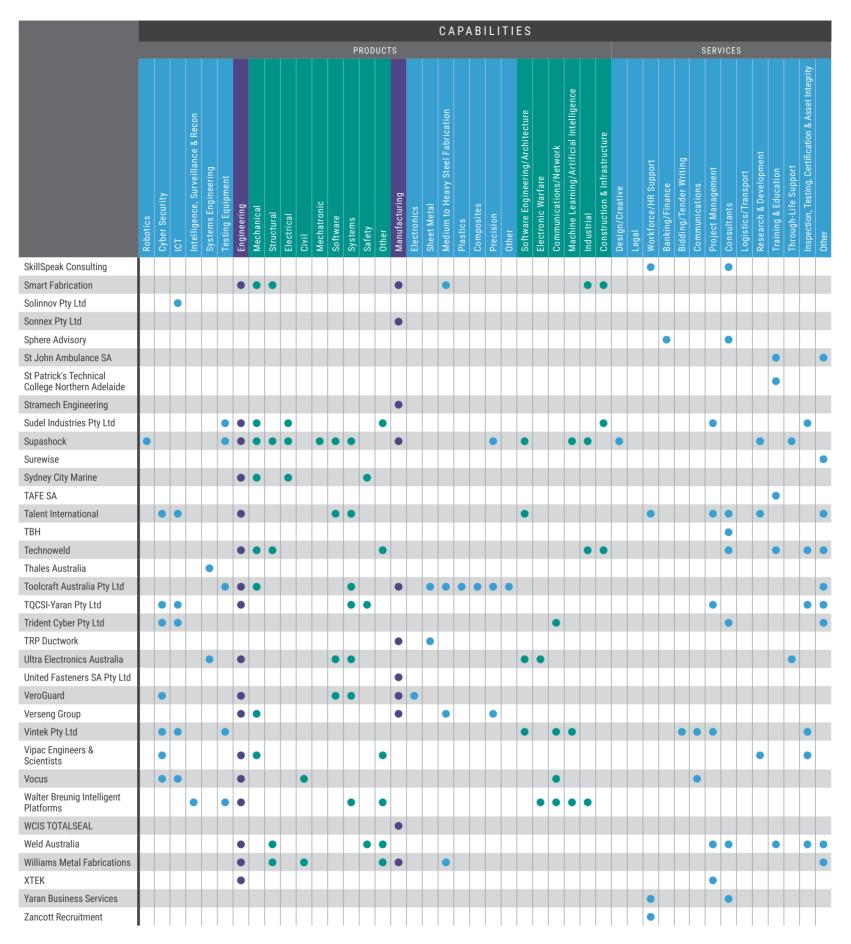
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Oct - Dec 2020 Defence Business DEFENCE RESEARCH

Adaptive Camouflage Research

Australian scientists have developed a range of lightweight panels that can change colour on demand, allowing drones to match their appearance to the background colours of the sky.

Unmanned aerial vehicles (UAVs), or drones, are a huge asset for surveillance and reconnaissance (ISR) operations.

The Australian Army has drones ranging from the **tiny Black Hornet** • which is about the size of a whiteboard marker – to larger models with wide ranging surveillance capabilities.

Despite their ubiquity and utility, however, all military UAVs are currently hindered by the same simple problem – the sky changes colour, but they don't.

Given the huge importance of remaining undetected during ISR operations, the static colour of drones can be a significant problem, but now, thanks to researchers at The University of South Australia and the Department of Defence, the solution is at hand.

FII researchers, led by Dr Kamil Zuber, have developed a range of lightweight polymer panels that can change colour on demand.

The polymers are what are known as electrochromic

materials, meaning they change colour in response to an electric field, and the exact colours can be tuned to specific voltages.

"Similar technology has been used in luxury cars, for dimming mirrors ②, and on the windows of the Boeing 787 Dreamliner ③," Dr Zuber says.

"But those applications are slow, require high power consumption to switch, and the electric flow must be maintained to sustain the change state.

"Our panels, on the other hand, have switching speeds in the range of seconds and offer colour memory, which means they retain their switched colour without a continuously applied voltage.

"They also operate in the range from -1.5 to +1.5 volts, which means you only need to use an AA battery to activate the change."

In addition to their chameleon-like characteristics, the panels are inexpensive, lightweight and durable, and can be either rigid or flexible, making them ideal for use on drones of all sizes and specifications.

"We have built a small-scale frame of a UAV and put our panels on it. We have demonstrated it against all sorts of different sky states and completed a range of



validation testing showing how these materials can respond in actual use," Dr Zuber says.

"We have five or six different materials, and each of the materials can produce two to three distinct different colours."

The technology is currently being refined to integrate self-awareness and autonomous adjustment into the system, so drones will be able to automatically change colour in response to changes in the surrounding environment.

"At this stage, we've been working mainly on the panels and the hardware, but during the latest stage of the project we've developed prototype electronics for the controller, which is something that could test the state of the sky and then automatically adjust the voltage to the panel to tune it to the right colour.

"So, if the UAV passed in front of a cloud, it would turn pale, then when it moved back into blue sky, it would turn back to blue."

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