

DEFENCE WEEK PREMIUM EDITION



Some commentators arguing for or against nuclear-powered submarines assume we are able to choose.

US DOD

Nuclear and conventional submarines are not mutually exclusive

Ewen Levick | Sydney

News that France has launched the first nuclearpowered Barracuda submarine has re-invigorated a polarised debate in Australia around whether the country should also have chosen to procure the nuclear variant rather than the planned diesel-electric submarines, as *ADM* reported earlier this week.

It is a well-worn debate argued vigorously in Australia's defence media. Hardly any point has been left unmade. Yet many of the positions taken by commentators are built on the assumption that we are still able to convert the Attack class to nuclear propulsion. The reality is that Australia will have to progress with the existing Attack class build regardless of how those submarines compare to a nuclear-powered alternative before the country has the infrastructure and expertise to maintain and

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crew a nuclear-powered fleet.

Some commentators observe that Australia is the third-largest exporter of uranium globally but has so far eschewed the operational and strategic benefits of nuclear-powered submarines (SSNs). Nuclear power, the argument goes, is 'reliable, efficient and cost effective', whereas the Attack class suffers 'large projected cost and delivery time frames.'

These commentators generally do not examine the costs and delivery time frames of setting up the infrastructure and expertise needed to support and maintain nuclear-powered submarines. It is not as simple as withholding uranium for

"Converting the Attack class to nuclear power is likely to suffer the same large project cost and delivery

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current program

is criticised for"

domestic consumption, embedding personnel in the nuclear fleets of other nations, or bringing foreign expertise here to install nuclear reactors on redesigned submarines.

First, where will we enrich the fuel? Australia has just one small nuclear reactor at Lucas Heights that was designed for small-scale nuclear medicine, not submarine-grade nuclear fuel. Building or importing nuclear infrastructure and know-how is possible but it would require time and significant political backbone to convince a sceptical public that the cost and risk is necessary; and as polls taken during the last federal election showed, defence is low on the public's list of priorities. It would also require Australia to convince a foreign supplier that it can safely operate nuclear submarines and infrastructure. That's not a quick process.

Second, where do we find an extra 3,000 submariners to operate this nuclear fleet? Even if political and public support were mustered, RAN <u>would need</u> 10 SSNs to generate a sustainable number of engineers, technicians and officers to run the fleet, supporting industry and a nuclear safety and training organisation capable of meeting international standards. According to ASPI's <u>RADM (ret'd) Peter Briggs</u>, a fleet of 10 SSNs requires roughly 3,600 submariners if the subs are double-crewed and around 2,250 if they aren't. We currently have around 600. Remember, HMAS *Perth* is currently <u>sitting in dry dock</u> because the RAN can't find a crew. If RAN is already unable to man its surface ships, it is difficult to imagine how it will increase the number of qualified submariners several times over in a shorter delivery time frame than the Attack class build. At the very least, RAN would require more conventional submarines to start building the necessary crew numbers before going nuclear.

Whilst these challenges are not insurmountable, they do mean Defence will need to press on with the conventional Attack class to maintain regional superiority and enable any transition to possible future SSN fleet. Even if the Attack class design were somehow converted to nuclear propulsion tomorrow, the time and money required to build or import nuclear infrastructure, stand up regulatory authorities, and find and train the personnel to man and maintain nuclear submarines means it would be an effort to get the <u>first SSN launched by 2044</u>. This is roughly when the last conventional Attack class sub is expected to be delivered. Collins will have been in the water for almost half a century.

Some make the counter-point that Australia can lease nuclear-powered Virginia

class subs from the US in the meantime. This does not hold weight. The US Navy is currently struggling with its own shortfall of SSNs and has no spare subs to lease. Even if we assume that Washington somehow mustered some spare SSNs, these subs would have to be maintained in the US until Australia stands up its own infrastructure – which would bring us back to the problem of how to sell the prospect to the Australian public, who would pay the costs of maintenance without gaining any jobs. The size of the Virginia class also exacerbates the crewing problem.

In short, converting the Attack class to nuclear power is likely to suffer the same large project cost and delivery time frames that the current program is criticised for. That is not to say a future SSN fleet is impossible, that it shouldn't be considered at all, or that one option is better than the other. If we do want the Attack class successor to be nuclear-powered, now is the time to start preparing. It is to say that we no longer have the luxury of a binary choice, and that arguments built on the relative build speed, ease or cost efficiency of converting the Attack class to nuclear propulsion require evidence.

2019 Essington Lewis Awards: a closer look at major sustainment

Katherine Ziesing | Canberra

In the Major Sustainment Activity – Over \$20 million per year category we see the <u>Jindalee Operational Radar Network</u> (JORN) Sustainment Transition program up against the <u>Patrol Boat Enterprise</u>. From world leading over the horizon radar technology to keeping a troubled ship class operating in defence of the nation, these two programs are excellent demonstrations of what happens when Defence and Industry truly partner to achieve an outcome.

The multi-billion dollar JORN transition program sees both incumbent BAE Systems



The Jindalee Operational Radar Network (JORN) Sustainment Transition program is up against the Patrol Boat Enterprise. DEFE

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Australia and Lockheed Martin Australia working with the program office to make sure that the massive program maintains its capacity while upgrading almost every part of the capability, from facilities to the algorithms behind the technology.

"The JORN upgrade and sustainment program has seen a oncein-a-lifetime transition point for one of Australia's most important sensor technologies," the judges' citation explained. "With multiple remote sites, the move from analogue to digital and massive workforce changes saw the Commonwealth and BAE Systems Australia work seamlessly with Lockheed Martin to hand over operation of this important national capability."

The Armidale class patrol boats have a history of issues, so taking on the sustainment of the class was always going to be a big ask. <u>Thales</u> has taken on that task in Darwin with great success, with every performance metric showing substantive gains.

"Sustainment of the Armidale fleet required a complete reset of both people and contracting given its troubled past," according to the judges. "With new industry partners, the SPO and refreshed industry team led by Thales have been able to deliver increased readiness, reliability and performance. The numbers behind the performance improvements on all fronts are spectacular and testament to what Defence and Industry can do when working together to achieve a common goal."

ADM and the Department of Defence are looking forward to recognising both teams at the <u>D+I gala dinner</u> on July 31 and attending the D+I conference on August 1.

How to secure your data

Rizwan Mahmood and Kevin Chenney | Newcastle

Data security in the supply chain is a long-standing concern for Defence. It is the responsibility of the Australian company in possession of controlled technology to safeguard data.

The protection of technical data has been highlighted as the greatest priority by US Departments of State and Commerce and they are likely to treat any breach very seriously. Whilst governments and primes continue to stress the need for cyber improvements, actual adoption of data security in the Defence supply chain remains poor.

In September 2018 we wrote an article <u>explaining the ITAR and EAR regulation</u> to readers. This was followed in February 2019 with an article that <u>detailed the specifics</u> around controlled technical data and what the Australian and US governments alike are introducing in order to protect this data. In June, we followed these articles with an outline of <u>initial procedural steps</u> Australian companies can take to ensure compliance in this area. We now conclude this series by focusing on safeguards and security controls Defence suppliers can apply to ensure compliance in cyber and secure controlled technical data.

The following are some of the key initial steps Defence suppliers can take to



Adoption of data security measures in the Defence supply chain remains poor

secure controlled technical data:

Establish data owners and users. One of the first steps is to establish the roles and responsibilities of users involved in the day to day operations of controlled data. It is important to identify who the data owners are. Data owners should be made responsible and accountable for the security of controlled data.

Identify and classify controlled data. Companies should identify and establish the type of controlled data they hold and the applicable regulations. This should include the source of the item or article, where it is stored, who has access to it and how is it being used, transferred or exported.

Protect controlled data using encryption. All controlled data should remain

"Suppliers need to have clear understanding of their data security and compliance requirements"

segregated and encrypted when in use (e.g. access of design files), when being stored (e.g. in network or cloud drives) and when being moved (e.g. in USBs or email attachments). At no point during its lifecycle should data be available in an unencrypted form, even to authorised users. This protects against malicious or accidental loss of data.

Limit access of controlled data. Inadvertent access of controlled data by unauthorised internal users is a common way to expose sensitive data. Access controls should be applied to controlled data and should be reviewed and updated periodically.

These controls should cover both databases and file-based sources.

Monitoring of controlled data. Companies should establish strong data monitoring and auditing controls to the extent needed to enable alerting, analysis, investigation, and reporting of unlawful or unauthorised activity.

Data disposal. Periodic disposal of controlled data that is no longer required is an essential step in reducing a company's risk and ensuring compliance. Companies should establish proper procedures to destroy/delete all physical and electronic controlled data at the end of its useful life.

Conduct regular audits and risk assessments. An effective audit and risk assessment program is essential to ensure what should happen, does happen, and that what should not happen, does not. Companies should periodically audit and assess the risks to controlled data and take corrective action based on the findings.

Having an effective data security and compliance programme can no longer be treated as a luxury item and is a must for Defence suppliers irrespective of their size. Suppliers need to have clear understanding of their data security and compliance requirements and should take steps to ensure they are protected.

Note: Rizwan Mahmood is Director Projects, e-Safe Systems Australia. Kevin Chenney is a Senior Consultant with Goal Professional Services.

RFSG pays forward the Indigenous contribution to the ADF

Amy Sarcevic | Sydney

In the aftermath of NAIDOC Week 2019, Indigenous Australians continue to be recognised for their valuable and longstanding contribution to the ADF.

Aboriginal and Torres Strait Islander people have participated in almost all battles and peace keeping missions that have taken place since the Boer War, more than a century ago. Around a third of those who served in overseas conflicts have been killed, several have been captured, and many continue to serve alongside a plethora of new recruits.

"Considering that Indigenous Australians were not officially recognised as citizens until 1967, the contribution of Aboriginal and Torres Strait Islander people to the defence of our nation is a remarkable historical footprint," Colonel John Papalitsas said.

COL Papalitsas is the Commander of the Regional Force Surveillance Group (RFSG), the Army's newest Formation and one which has been instrumental in paying forward the contribution Indigenous people have made to the ADF.

Alongside the Army Aboriginal Community Assistance Programme and Army



Sarpeye dancers from 51st Battalion, Far North Queensland Regiment perform at the Australian War Memorial.

PREMIUM EDITION

Cadets, the RFSG is one of three important initiatives that support the Army Indigenous Strategy (AIS), implemented in 2008.

Through various IE&D programs, the RFSG has been helping the Army honour its commitment to the AIS and supporting whole-of-government efforts to "Close the Gap" between Indigenous and non-Indigenous citizens.

This work complements its operational role: to provide situational awareness and understanding on prescribed threats to Australia's national interest, through the conduct of remote-area, land and littoral, reconnaissance and surveillance operations, to maintain national sovereignty and border protection.

"Aboriginal and Torres Strait Islander people have participated in almost all battles and peace keeping missions that have taken place since the Boer War"

"IE&D is a main effort task for the RFSG and is central to the strategic value we present to Army, and the generation of operational capability within the RFSG. Border protection operations (BPO) and IE&D are equivalent priorities for the Group and are mutually supporting 'lines of effort'," Papalitsas said.

The Regional Force Surveillance Units (RFSUs) – NORFORCE, 51st Battalion and the Pilbara Regiment – enlist a large number of Indigenous soldiers, many of whom are employed on a part-time basis or via the Regional Force Surveillance List. Between 2018-19, the RFSG enlisted more than 133 Indigenous personnel and 25 more were registered onto related programs this year.

NORFORCE is particularly known for its IE&D efforts, but other units are also closely involved with local communities and

focussed on Indigenous employment.

The RFSG realises meaningful IE&D outcomes via pathway programs such as the Army Indigenous Development Program – Northern Territory (AIDP NT); employment opportunities; on-going educational opportunities, and support to community engagement and development.

The Pilbara Regiment is presently supporting the work of the Army Aboriginal Community Assistance Program (AACAP) in Jigalong, WA via the provision of Local Observers to assist with community liaison and engagement for ongoing opportunities to serve with the Pilbara Regiment.

NORFORCE has recently undertaken community engagement in Borroloola and the Barkley region, working to re-establish links into the area with communities seeking to realise opportunities for their youth. They have also supported scoping for AACAP 2021 across Arnhem Land so it can integrate ongoing support to Army's community assistance program once the community is selected from the shortlist.

51 FNQR has engaged heavily in Wujul Wujul over the past two years, working collaboratively with the elders to provide opportunities for service. In 2018, this saw the first members of Wujul enlist in the Army since WWI, with multiple students from this community on the recent RFSG Education & Development Course.

All of these examples are seeing enhanced capability for the RFSG and Army, while also realising ongoing employment, education and self-development for members of the community.

"The establishment of the Group by the Chief of Army (CA) demonstrates

Army's key focus on providing opportunities for Indigenous Australian's and a recognition of the primary role played by the RFSG in IE&D," Papalitsas said.

"At our Formation parade the CA in his speeches noted that the RFSG was Army's 'vanguard' of Army's Indigenous Strategy, which links to the Defence Reconciliation Action Plan in supporting the 'Closing the Gap' Strategy.

"Army recognises the benefits of posting personnel to units of the RFSG as it develops their cultural competence, emotional intelligence, and their ability to work in complex human and physical environments. This assists in developing our personnel to face the challenges of the modern battlefield and meets with the CA's strategic guidance: 'Army in Motion'."

RFSG delivers IE&D outcomes as a priority, generates capability to protect the nation's borders while providing greater opportunity for Aboriginal and Torres Strait Islander people to serve within Army. In doing so, it sets a precedent for the wider Army and community.

MOST READ ONLINE AT WWW.AUSTRALIANDEFENCE.COM.AU



- 1. Defence releases Tiger replacement RFI
- 2. Women in Defence Awards 2019 winners announced
- 3. RAAF begins annual training with F-22 Raptors
- 4. France launches first next-gen nuclear submarine
- 5. The hangars on the Hunter class frigates are inadequate

Memorial commissions first female Aboriginal war artist

The Australian War Memorial has commissioned a body of work by artist Megan Cope, making her the AWM's first female Aboriginal official war artist.

In 2017 Cope travelled to the Middle East accompanying various Defence units participating in Operation Accordion.

Cope was initially sent to Qatar, before being attached to ADF units in the Middle East. There she recorded and interpreted subjects concerning Australia's contribution to the international effort in the Middle East Region.

Megan Cope is a Quandamooka woman (North Stradbroke Island) from southeast Queensland. Her site-specific sculptural installations, video work, and paintings investigate issues relating to identity, the environment, and mapping practices. Her work explores the myths and methods of colonisation.

Cope says the series of works she has produced for the Memorial titled *Flight* or *Fight* was primarily inspired by a 10-hour flight she took over the Middle East.

"That flight informed most of my research and exploration that has then informed the work that I've made ... I was very interested in the flight path that we took; it included elements of the Persian Gulf and the Euphrates."

"All of the works that I've done have mapped those memories and critical things



Megan Cope is a Quandamooka woman (North Stradbroke Island) from south-east Queensland. credit: Jo-ANNE DRIESSENS VIA AWWI.

"Cope has described her work as a war artist as the 'most challenging' thing she's ever done

in the environment that our forces have done or are involved in on land or ground."

Cope's work is held in public and private collections nationally and internationally. Most recently she was a finalist for the Redlands Konica Minolta Art Prize and also undertook a residency in Paris with the Australian Print Workshop for the project "French Connections".

Her work has been on display in solo and group exhibitions, including 'The National' (2017) at the Art Gallery of New South Wales and 'Defying Empire: 3rd National Indigenous Art Triennial' (2017) at the National Gallery of Australia.

Cope's great-great uncle Richard Martin was killed in March 1918 during fighting in France. He was not eligible to join the Australian Imperial Force because he was Indigenous, so he pretended to be from Dunedin, NZ to enlist.

Cope has described her work as a war artist as the 'most challenging' thing she's ever done.

Cope's commissioned works will be available for viewing by members of the public Monday through Friday, by organising a behind-the-scenes tour with the Memorial's art curators.

Space Agency signs on with Myriota

The Australian Space Agency has signed a Statement of Strategic Intent and Cooperation with Australian space start-up Myriota to enhance the capabilities of Australia's space industry.

Deputy Head of the Australian Space Agency Anthony Murfett welcomed the statement and its contribution to the transformation of Australia's space sector. "This statement embodies the transformation we are witnessing in the space industry



Myriota CEO Alex Grant with ASA Deputy Head Anthony Murfett (right).

CREDIT: ASA

both here in Australia and around the world - it demonstrates that businesses of all sizes can make a significant contribution to Australia's space industry," Murfett said.

"The Australian Space Agency's goal is to triple the size of the Australian space sector from \$3.9 billion to \$12 billion, and create 20,000 new jobs by 2030. This statement highlights how companies are contributing to the growth of the sector and how space technologies can help other areas of the economy.

"Myriota closely aligns with the vision outlined in **Australia's Civil** Space Strategy"

"Myriota is a global leader in nanosatellite Internet of Things (IoT) connectivity, and their use of nanosatellite technology is used to solve issues affecting everyday Australians, including water and agricultural management in regional Australia.

"Combined with their commitment to education and diversity in Australia's growing space sector, Myriota closely aligns with the vision outlined in Australia's Civil Space Strategy."

Myriota is an Australian company specialising in the provision of IoT data connectivity via low Earth orbit satellite, that aims to enable

Australian and global industries to obtain the sensor and location data they need to digitally transform their businesses.

"It's the long battery life and small size of our solution, and its ability to communicate directly with a satellite even under those constraints, that make it very attractive for [military] applications," Myriota CTO David Haley told ADM last year.

"The establishment of the ASA comes at a time when nanosatellites and IoT

PEOPLE ON THE MOVE

Sydney City Marine has made two significant senior appointments aimed at reinforcing and expanding the facility's focus on Defence. John Hickey, General Manager, has returned to SCM with a brief to coordinate operations and optimise the facility's resources to serve the existing client base and future partners. Warren Levin joins SCM as Director, Commercial & Defence, bringing a wealth of a distinctive professional knowledge of Defence Industry business and market know-how.

are helping to solve major issues that have long plagued Australian businesses, such as manual water monitoring in regional Australia," Myriota CEO Dr Alex Grant said.

"We've outlined our growth plans which include adding 25 satellites to our constellation and expanding our team to 50 people by 2022 in order to support the delivery of these solutions."

"We're passionate about fostering a diverse STEM workforce. Our strategy has a particular focus on developing initiatives that profile the achievements of female tech leaders, while investing in Women in STEM programs to creating a thriving female workforce," Grant continued.

RUAG Australia unveils new paint booth for F-35s

RUAG Australia has inaugurated its new paint booth facility at its Wingfield, SA Surface Finishing Centre.

A new capability, the high standard paint booth offers reliable, durable and efficient aerospace component finishing capabilities for the processing of large numbers of varying sized components. Fully accredited by key aerospace partners, it supports the F-35 and other aerospace and defence programs.

Designed in consultation with Lowbake, the new aerospace and defence paint booth expands and upgrades the capabilities available at the Wingfield Surface Finishing Centre. Enhanced processes and integrated capabilities include masking, value-add workshop, a paint booth, a drying facility and non-destructive testing (NDT).



The new surface finishing ovens are capable of controlling temperature and humidity to conform with stringent F-35 requirements.

DEFENCE

"The fully automated processing line allows the finishing process to operate in all ambient weather conditions

The facility is engineered to ensure faster, high-precision finishing solutions for the application of aerospace paints, including waterborne epoxy and polyurethane, and fuel tank coatings, with improved and defined curing efficiency. The facility also features additional capabilities for curing fuel cell coatings.

"This new surface finishing facility allows us to meet the rapidly increasing demand to support both industry diversification as well as our participation in highly demanding programs, such as the F35," Terry Miles, General Manager RUAG Australia, said.

"Specifically designed to solidify our strong position within the industry for aerospace surface finishing, the accredited Wingfield Surface Finishing Centre is also a second source service-provider, providing the ADF and aerospace industry with the necessary alternative supply chain solution for surface finishing."

The fully automated processing line allows the finishing process to operate in all ambient weather conditions. Features of the paint and curing complex include a minimal contamination design, 10-micron minimum inlet filtration, full downdraught configuration and 1200 lux light, a minimum part surface requirement. The new surface finishing ovens are capable of controlling temperature and humidity to conform with stringent F-35 requirements of operating between 40-64°C at 20 per cent and of maintaining temperature uniformity at plus or minus 5°C for extended periods of up to 36 hours.

"The needs and demands of the aerospace industry are evolving as technology becomes more advanced and we have a strong drive to keep pace with these advancements," Stephan Jezler, Vice President Aviation International for RUAG, said.

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Forthcoming Events

ADM EVENTS

More detail on **ADM** Events can be found on our dedicated website:

- ADM STEM and Defence Summit 14 August 2019
- ADM Defence Estate and Base Services Summit 12 September 2019
- ADM North Australian Defence Summit 23-24 October 2019

Defence Maritime Environment Working Group

Date 24 July 2019

Location National Gallery of Australia, Parkes, Canberra

Website www.business.gov.au

The Maritime Environment Working Group (MEWG) is a forum for engagement between Defence and the Maritime Industry to consider opportunities for innovation and collaboration early in the capability life cycle. It provides an opportunity to test the strength of capability requirements and proposals, to inform industry regarding future capability programs and challenges and to foster the development of Navy's capability modernisation program.

ADM Essington Lewis Awards

Date 31 July 2019

Location National Convention Centre, Canberra Website www.defence.gov.au/casg/dplusi

ADM's Essington Lewis Awards will return to the National Convention Centre on Wednesday 31 July 2019 to recognise excellence in Defence projects. The event is limited to the first 1000 attendees wishing to network and interact with Defence and defence industry leaders, celebrate the achievements of their peers and be entertained by our celebrity MCs. This black tie gala event is not to be missed!

Defence + Industry Conference

Date 01 August 2019

Location National Convention Centre, Canberra Website www.defence.gov.au/casg/dplusi

The Defence + Industry Conference is the premier Defence and industry conference held in the national capital. Consistently attracting in excess of 1100 delegates to hear from Defence and industry leaders discussing collaboration in the acquisition and sustainment space. Thursday 1 August will see the National Convention Centre come alive with informative, thought-provoking presentations from Defence decision makers and industry leaders, along with interactive Q&A sessions and networking opportunities.

Behind Closed Doors

Date 06 August 2019

Location Kedron Wavell Services Club

Website www.eventbrite.com/e/behind-closed-doors-brisbane-tickets-63931133742

This is a rare chance to look at submissions through the eyes of the evaluators, the realities of bid panels, and how writing winning content is at the heart of tender success. This seminar is particularly relevant to SME suppliers bidding to primes for supply chain contracts. This seminar, brought to you by Aurora Marketing and The Australian Industry & Defence Network Queensland (AIDN QLD), takes you behind the scenes with our tendering experts to learn what evaluators really want from suppliers and their proposals.

Lockheed Martin Industry/CDIC Cairns Briefing Opportunities

Date 08 August 2019

Location 119-145 Spence St, Cairns.

Website www.eventbrite.com.au

AIDN QLD in partnership with DEFNQ would like to invite you to attend the Lockheed Martin Industry/CDIC Briefing Opportunities for Australian Industry in Cairns. Lockheed Martin is engaged in the integration and sustainment of advanced technology systems, products and services across space, air, land, sea and cyber domains. The CDIC helps transform the Defence and industry relationship, facilitate innovation and exports, and fund defence industry development, critical defence business maturity and skilling.

WA Indo-Pacific Defence Conference

Date 12 August 2019
Location Crown Towers, Perth
Website www.perthusasia.edu.au

Senior government officials, leaders from industry and the WA SME sector will come together to discuss critical issues and partnership opportunities for WA defence at the WA Indo-Pacific Defence Conference on Monday 12 August. Attendees will hear from Premier Mark McGowan; as well as Minister for Defence Senator Linda Reynolds, Minister for Defence Industry Melissa Price, Shadow Minister for Defence Richard Marles and Shadow Minister for Defence Industry Matt Keogh.

DST Scindicate 2019: Partnering for Impact

Date 15-16 August Location Adelaide, SA

Website Scindicate@dst.defence.gov.au

Once again, industry, universities and research agencies are invited to participate in the two-day activities which will include technology demonstrations, business matchups, workshops, briefings and laboratory tours, as well as opportunities for networking and forging new collaborations. A Next Generation Technologies Fund Showcase will be a special feature of the event.

PGCS 2019

Date 20 - 22 August 2019

Location The Canberra Rex Hotel, Canberra Website www.pgcsymposium.org.au

Now in its 7th year, PGCS 2019 will focus on ways to build the foundations needed to create project and program success. Creating the organisational capability needed to underpin the consistent delivery of successful projects in the 2020's starts at the top. Leadership and a sustained focus are required to build a culture of excellence that can balance innovation with surveillance and accountability, encourage learning, and manage knowledge effectively.

Hunter Defence Conference 2019

23 August Date

Location Crown Plaza Hunter Valley

Website www.trybooking.com/book/event?eid=503298

The 2019 10th anniversary Hunter Defence Conference will focus on driving collaboration between Defence Primes, NSW regional SMEs, academia and the Department of Defence. Key presentations at this year's conference will include capability development staff from Army, Navy and Air Force Headquarters, Defence Primes articulating the support requirements they will have over the coming decade from regional SMEs. Former Minister for Defence Christopher Pyne will present a keynote at the dinner.

Australasian Simulation Congress

02 - 05 September 2019 **Date**

Location Gold Coast Convention and Exhibition Centre. Gold Coast

Website www.simulationcongress.com

The Australasian Simulation Congress provides a focused opportunity for industry development, business growth, training, discussion and distribution of information related to Simulation, Modelling, Training and Decision Support. Simulation Australasia can help you directly engage with industry, policy makers, Government and relevant stakeholders to facilitate you and your organisation achieving the success only a truly international Congress can provide.

Synthetic Environment Working Group (SEWG)

06 September 2019 Date

Location Gold Coast Convention and Exhibition Centre

www.defence.gov.au

The Synthetic Environment Working Group (SEWG) 2019 is a one-day Conference/ Working Group sponsored by the Department of Defence, ADSTC and managed by the Simulation Governance Directorate.

Australian Naval Institute's Goldrick Seminar

18 September 2019

Location ADFA

Website www.trybooking.com/BDYHF

The 2019 ANI Goldrick Seminar will discuss defence issues associated with the maintenance of Australia's maritime trade. Speakers will be drawn from senior levels of Defence, academia and industry. As in previous years, the theme -Maritime Trade and its Implications for Australia's Defence – was selected by the Chief of Navy; an outcomes report will be provided to the Chief of Navy and it is anticipated that the proceedings will be subsequently published by ACSACS.

Army Innovation Day 2019

25 September, 2019 **Date** Location Adams Auditorium, ADFA

Website www.army.gov.au

AID19 will be held on 25 September and the purpose is for selected respondents to pitch their proposed innovations to assessors, Capability Managers and Defence Innovation Hub personnel. Respondents may also be able to verify, validate and clarify their Request for Proposal response. Request for Proposal submissions closes on 3 September and on 12 October respondents will be notified of outcomes.

Australian Cyber Conference 2019

07-09 October 2019

Location Melbourne Convention and Exhibition Centre

cyberconference.com.au

The Australian Cyber Conference 2019 will provide business leaders with insights and best practices taught by the industry's top experts through keynotes, panel sessions and live demonstrations. Attending the conference will enable you to network with these practitioners to help you better understand and manage current threats, as well as identify and prepare to meet emerging challenges.

Pacific 2019

08-10 October 2019 Date **Location** Sydney Convention Centre Website www.pacificexpo.com.au

As the only comprehensive international exhibition of its kind in the Indo-Asia-Pacific region, PACIFIC 2019 will again provide the essential showcase for commercial maritime and naval defence industries to promote their capabilities to decision-makers from around the world.

2019 Parari Australian Explosive Ordnance Safety Symposium

05-07 November

Location ADFA

Website parari@defence.gov.au

This year's symposium brings together delegates from around the world to discuss the latest innovations and advances in explosives, munitions and weapons safety. International and local experts from industry, academia, military and government will share their research to explore Explosive Ordnance Safety opportunities and challenges as a community.

MilCIS 2019

Date 12-14 November 2019 **Location** Canberra Convention Centre

www.milcis.com.au Website

In November each year, the Defence Chief Information Officer Group (CIOG) partners with the UNSW Canberra and the Institute of Electronic and Electrical Engineers (IEEE) to present MilCIS. The annual Military Communications and Information Systems (MilCIS) Conference welcomes military and government organisations, academia, and defence industries to contribute to the future direction of military communications and information systems.

SubSTEC 5 Conference

Date 18-21 November

Location Esplanade Hotel, Fremantle Website www.submarineinstitute.com

The 5th Submarine Science, Technology and Engineering Conference (SubSTEC 5) will be held at the Esplanade Hotel, Fremantle, WA 18th-21st November 2019. The theme of the Conference will be: 'Innovation and Investment in the Sub-Sea Environment'. SubSTEC5 will be held with the support of the Institute of Marine Engineering, Science and Technology (IMarEST).

Corrosion and Prevention 2019

Date 24-27 November

Location Crown Promenade, Melbourne Website conference.corrosion.com.au

Corrosion and Prevention 2019 will bring together leading researchers and industry practitioners who combat corrosion daily. Diverse technical streams will showcase the latest developments in corrosion, ranging from fundamental corrosion science to hands-on application.

2020

Rotortech 2020

Date 16-18 June 2020

Location Royal International Convention Centre, Brisbane

Website www.rotortech.com.au

RotorTech 2020 is the region's premier helicopter and unmanned flight systems showcase and forum, bringing together operators, manufacturers, suppliers, regulators and government across the Indo-Asia-Pacific. With a comprehensive three-day free industry conference program, RotorTech 2020 will also feature manufacturers technical workshops and an industry exhibition showcasing more than 100 helicopter and unmanned flight related companies.

Land Forces 2020

Date 01-03 September 2020
Location Brisbane Convention Centre
Website www.landforces.com.au

The biennial LAND FORCES exposition is an international industry event to showcase equipment, technology and services for the armies of Australia and the Indo-Asia-Pacific. The Land Forces 2020 team is now setting about ensuring the event will achieve its goals of providing an effective platform for the exchange of ideas on key land forces issues and of taking Australian industry to the world.