

# ADM

AUSTRALIAN DEFENCE MAGAZINE

SERVING THE BUSINESS OF DEFENCE

## DEFENCE WEEK PREMIUM EDITION



Rheinmetall has transitioned some 'Block I' Boxer vehicle final assembly and quality acceptance work to Australia earlier than scheduled.

DEFENCE

## SENATE ESTIMATES FOLLOW UP REVEALS HIDDEN GEMS

Many **ADM** readers will note that I have a special place in my heart for Senate Estimates and their not so well-known cousins; Questions on Notice (QoN) and their subsequent answers.

**KATHERINE ZIESING | CANBERRA**

This is when a question is asked, and the respondent does not have the information at hand and will get back to the committee later. To give you an idea of scale of what this can look like, in the most recent Senate Estimates hearing on December 11 last year, over 1,000 responses were generated by the Department which are all available online.

They contain many little gems. For example, take this exchange with Senator Penny Wong and General Manager Submarines Greg Sammut.

### IN THIS ISSUE

Senate Estimates follow up reveals hidden gems	1
Australian naval shipbuilding: first things first	4
DEFCON Technologies to supply hearing protection for Team Lynx	6
Air Affairs conducts first Phoenix dual presentation	8
SA launches space services mission	9
278 Squadron closes maintenance training support	11
Forthcoming Events	13

“When will the preponderance of Australia’s operational submarine fleet be future submarines? When will the majority of our submarine fleet be Attack class? Will it be six attack and four Collins submarines in 2042 can you confirm?”

Answer: “Subject to Government’s decision on the number of Collins class submarines to undergo life-of-type-extension, the majority of the submarine fleet will comprise Attack class submarines in 2042.”

**“THERE ARE SO MANY LITTLE DETAILS THAT GET LEFT OUT OF MINISTERIAL STATEMENTS AND INDUSTRY PRESS RELEASES”**

There are so many little details that get left out of ministerial statements and industry press releases that can be picked up from this process. There were a few that stood out to me that warranted further follow up; Defence ICT programs in the Portfolio Budget Statements (PBS), the Hunter class design review timeline and Land 400 Phase 2 build program.

## DEFENCE ICT

Defence ICT programs are no longer the single province of the Chief Information Officer; they are an integral part of generating capability to the wider ADF, both at home and on operations. The Terrestrial Communications program has a total budget \$461 million while ERP has a total budget \$469 million under the first of many tranches. These figures alone would put both programs well within the PBS Top 30 table if it included ICT projects. ADM asked ‘Will ICT programs be included in the PBS going forward in any way? If not, why?’

“The Top 30 Acquisition Projects tabled in the Defence Portfolio Budget Statements (PBS) has historically focused on projects in the Military Equipment Acquisition Program, as this represents approximately 75 per cent of the total Acquisition Program,” a Defence spokesperson said. “By comparison, the ICT Acquisition program represents just five per cent of the total Acquisition Program in 2020-21.

“Defence will review the presentation of projects in future PBS as part of ongoing improvements of presenting financial information.”

The Department might have ‘historically focused’ on traditional military programs but perhaps it is time for this to change.

## HUNTER CLASS

QoN also outlined how the Final Critical Design Review for the Hunter class is now Q1 2025, somewhere between 2-2.5 years after actual construction is meant to start. ADM cannot help but think of other shipbuilding programs where build started before the design was set in stone and the issues that caused.

“Design work is continuing on the Hunter Class frigate in areas where it differs from the baseline Type 26 design,” a Defence spokesperson said. “This is largely focussed on Australian specific design elements such as the installation of the Australian CEA Technologies radar and US Aegis combat system.

“The spatial integration of the Design Zones lower in the ship (which generally have a low level of change to the Type 26 reference ship design (RSD)) can proceed while the design matures in the Design Zones higher in the ship (which have a high level of change from the RSD). This allows construction of the mature Platform elements, the

Design Zones with low level of change, to begin while the advanced Combat System design is finalised.

“The actual Final Critical Design Review process will occur over an extended period of time and will be a final culmination of both Platform and Combat Systems Design efforts. The Q1 2025 date represents when the Project expects to exit the Review,” a Defence spokesperson concluded.

In a nutshell, get the ‘easy’ bits done first and do it in a rolling wave.

### “SOME COMPANIES ARE BEING ASKED TO QUOTE FOR AS LITTLE AS 40 VEHICLE SETS OF EQUIPMENT UP TO 180”

## LAND 400 PHASE 2

There have been some rumblings in the SME community about how the build program for the 211 Boxers under Land 400 Phase 2 is coming along. Some companies are being asked to quote for as little as 40 vehicle sets of equipment up to 180, a huge quantum that affects their ability to quote competitively.

QoNs confirmed that the first 25 vehicles going to be built in Germany, but the next 44 ‘will be progressively built and assembled under a gradual ramp down in Germany and ramp up in Australia.’

ADM asked: ‘Can you confirm that a third of the total 211 vehicles will be assembled all or in part in Germany? What is the manufacturing breakdown between Australia and Germany? How does that affect their AIC commitments?’

“The number of Boxer vehicles to be built or assembled in Australia has not changed,” a Defence spokesperson said. “As stated in the response to the Questions on Notice, the 25 ‘Block I’ Boxer vehicles will be built and assembled primarily in Germany, then the first 44 ‘Block II’ vehicles will be progressively built and assembled under a gradual ramp-down in Germany and ramp-up in Australia.

“During the COVID-19 pandemic, Rheinmetall has been fast-tracking some of the assembly to Australia. For example, due to COVID-19 restrictions in Europe, Rheinmetall has taken the opportunity to transition some ‘Block I’ Boxer vehicle final assembly and quality acceptance work to Australia much earlier than originally planned.

“Production transfer of each major sub-system has been planned for different times, depending on the commissioning of different production zones in the Military Vehicle Centre of Excellence (MILVEHCOE). The production zones include turret and mission module welding, armour manufacture, electro-optics and electronics component assembly, cannon assembly, turret and vehicle build and integration, and simulator assembly. Further, Defence and Rheinmetall Defence Australia have not yet finalised the design of all variants of the Boxer, which will inform production transfer. This process is ongoing.”

While the November 2020 ANAO report into the Phase 2 acquisition strategy was relatively positive, there were some issues around the Risk Mitigation Activity (RMA) that will hopefully be addressed in the Phase 3 activities.

“Rheinmetall Defence Australia’s Australian Industry Capability commitments have not changed,” a Defence spokesperson concluded. “Rheinmetall Defence Australia’s Public AIC Plans includes an Australian expenditure commitment of \$1.685 billion for the acquisition contract and \$173 million for the support contract.”

# AUSTRALIAN NAVAL SHIPBUILDING: FIRST THINGS FIRST

**Australia will soon begin production of Attack-class submarines and Hunter-class frigates, ostensibly bringing more than \$100 billion in new naval ship construction to domestic industry. While many in political and labour circles see this as a boon for Australian companies, actual domestic spending may be far less than imagined.**

**PAUL DELUCA AND ROGER LOUGH | RAND AUSTRALIA**

In a report issued five years ago, RAND Australia proposed a number of principles – ranging from introducing a continuous build approach and establishing consistent design and production demand factors, to selecting mature designs, to limiting changes in design – to reinvigorate and rationalise naval shipbuilding in Australia. The report, *Australia's Naval Shipbuilding Enterprise – Preparing for the 21st Century*, estimated that the principles would significantly help erase the 30-40 per cent cost premium that has plagued the domestic naval shipbuilding industry for decades.

The 2017 Naval Shipbuilding Plan embraced the principles and they remain valid today. That is not to say that they have been easy to implement. In the Hunter and Attack class programs, for example, the government did not choose a mature design. This, inevitably, will have cost and schedule implications given there is ample evidence that large complex military programs are invariably overweight, over budget and behind schedule.



Australia will soon begin production of Attack-class submarines and Hunter-class frigates.

BAE SYSTEMS AUSTRALIA



Recently, Australia's policy debates have focused on how best to leverage Hunter and Attack class programs to enhance its sovereign naval shipbuilding powers. In these debates, improving Australian industry *content* or *capability* – both of which have been shortened to the acronym AIC – have been offered as means to achieve independence and sovereign control of critical shipbuilding elements, activities and components. In this context, content is the level of Australian company participation in a program, measured in dollars, per cent of components produced, or share of workload; capability is the ability to design, develop, and deliver warships on schedule and within budget.

**“THERE IS A PRIMA FACIE CASE THAT AUSTRALIA CAN BUILD WARSHIPS WHEN IT WANTS. THE ISSUE IS, CAN IT BUILD THE RIGHT WARSHIPS?”**

But this focus on AIC may be misleading.

By emphasising AIC and deciding to maximise local industry as a key component of Australia's shipbuilding industry policy at this early stage, the government may be overburdening cost and, especially, schedule issues—issues already hampered by COVID-19.

Some of these strains may be unavoidable. As part of the recovery from the COVID-19 pandemic, the government has made Australia's manufacturing industry a priority, with a strong emphasis on defence industry, with fiscal injections and simplifications to Defence's procurement processes. However, because both the Hunter and Attack class vessels derive from existing overseas designs, their prime contractors will initially favour Australian supply chains for commercial, non-ship-specific components, which are easier and quicker to purchase in the short term than complex ship-specific systems.

While this suggests AIC is more about content at this stage, the situation will likely change when the enterprise matures. As the shipbuilding projects progress and if government policies continue to emphasize advanced manufacturing, Australian industry will likely become more mature and prevalent in the supply chain. It can then be expected to be the source for more complex ship-specific systems. However, this will take time.

Overlaid on the AIC debate is the issue of sovereignty. In simple terms, Defence defines sovereignty as a capability that is available where and when it is needed. To a significant extent, this has been achieved in naval shipbuilding by the decision to build and sustain the vessels in Australia; i.e., there is a prima facie case that Australia can build warships when it wants. The issue is, can it build the right warships?

This aspect of sovereignty is addressed by increasing local sourcing of key systems and subsystems that have strategic importance, such as propulsion and energy systems or advanced electronics like phased array radars. As the level of local industry capability increases, especially in the number of complex ship-specific systems that have strategic significance, a natural consequence is the ability of Australia to have a domestic design capability – again a significant contribution to sovereignty given the lack of ties to local suppliers that an overseas design would bring.



## MEET THE MAKERS

START TOUR

Do you know who made your clothes?  
Step inside an interactive 360 Degree Virtual Tour  
of Australia's largest remaining uniform manufacturing facility.  
Meet the local makers and hear their stories.

ADAY

However, no individual country can afford a totally and wholly home-grown naval vessel design and manufacturing capability. At some stage key components and design expertise will need to be sourced from a global supply chain – regardless of whether the design is domestic or foreign. The challenge for Australia is to determine how “local” the design and manufacturing needs to be to meet Defence’s sovereignty criteria, as well as to determine the cost of meeting those criteria.

The major AIC challenge for government is how much extra risk it can tolerate to the programs’ cost and, more importantly, to its schedules by pushing either content or capability (or both) at this early stage of the shipbuilding program. These risks will likely diminish over time. Thus, government might consider articulating specific Australian industry content and capability goals spread over the build period to give clear guidance on what risks it is prepared to tolerate at each stage of the shipbuilding program.

*Note: Dr. Paul DeLuca is a senior engineer at the non-profit, non-partisan RAND Corporation. Dr. Roger Lough is the former Chief Defence Scientist (2003-2008) and currently Consultant to RAND Australia.*

## DEFCON TECHNOLOGIES TO SUPPLY HEARING PROTECTION FOR TEAM LYNX

**Canberra-based Defcon Technologies Group has been selected to supply, integrate and support the latest generation of INVISIO Combat Hearing Protection technology to Rheinmetall Defence Australia as part of the Lynx IFV Intercom System in their bid for Land 400 Phase 3.**

“Operationally, the Lynx is likely quieter than the vehicle it will replace, so continuous engine and road noise will not present the same challenges to hearing and communicating as in the past,” Nick Stokes, Defcon’s Managing Director, said. “However, impulse noise from large-calibre weapons has replaced continuous noise as the main threat to soldiers’ hearing and is harder to mitigate.

“The degraded aural situational awareness that exists in the confines of all combat vehicles adds more complexity to what is already a hazardous acoustic environment and creates multiple challenges for mounted infantry who need to hear, communicate and function under stressful combat conditions.

“We look forward to strengthening our relationship with RDA by supporting Team Lynx as they establish their Systems Integration Lab. In the longer term, we look forward to





Craig Ramsay and Nick Stokes of Defcon Technologies, Lee Davis, General Manager Land 400 Phase 3, and Gary Stewart, Managing Director of Rheinmetall Defence Australia.

SUPPLIED

### **“IMPULSE NOISE FROM LARGE-CALIBRE WEAPONS HAS REPLACED CONTINUOUS NOISE AS THE MAIN THREAT”**

for nearly 20 years.

Rheinmetall is delivering three Lynx vehicles to compete in Risk Mitigation Activity trials.

providing our mounted infantry with the enhanced hearing protection, audio communications and aural situational awareness capabilities that our dismounted combatants have enjoyed via Land 125 Phase 3B Survivability – Combat Hearing Protection since 2016.”

Defcon Technologies has been providing Combat Hearing Protection and related capability to the ADF

### **PEOPLE ON THE MOVE**

Kleos Space has appointed seasoned industry executive Eric von Eckartsberg as its Chief Revenue Officer. Von Eckartsberg is a business executive with an extensive background leading rapid growth in international sales and business development teams within the defence and intelligence sectors.

Safran has announced changes to executive committee functions: Bernard Delpit, Chief Financial Officer, has been appointed Group Deputy CEO, effective January 14, 2021; Céleste Thomasson, Executive Vice President, Corporate Secretary, has been named Corporate Secretary and Group Ethics, also effective January 14. This follows the announcement of Olivier Andriès as CEO, effective January 1.

SpaceLink announced it has built out its senior executive team: Tony Colucci has been named Chief Strategy and Commercial Officer and Larry Rubin joins as Chief Operating Officer; Rob Singh, formerly of Maxar Technologies, has joined as Chief Technology Officer, and David Lihani, formerly of Astrolabe Enterprises, was named General Counsel.

Goal Professional Services has announced that Bret Barton has been appointed as CEO of the Goal Group. Bret is an Engineering Executive with a long history in Canadian, US and Australian Defence services. He was previously the Chief Executive Nova Systems Asia-Pacific and a member of Nova’s Executive Leadership Team.

Minderoo Foundation’s Fire and Flood Resilience initiative today announced the appointment of Rear Admiral Lee Goddard. *RADM* Goddard, who has recently completed his tenure as Commander Maritime Border Command and Commander Joint Agency Task Force Operation Sovereign Borders, will lead Minderoo Foundation’s Fire and Flood Resilience initiative network of collaborators.



# AIR AFFAIRS CONDUCTS FIRST PHOENIX DUAL PRESENTATION

**In early December 2020, Air Affairs Australia participated in a large naval exercise within the Eastern Exercise Area and completed the first ever dual Phoenix target presentation.**

The operation provided a double low level threat emulation against HMA Ships *Hobart*, *Brisbane* and *Sydney*. This was the first time these ships had exercised together.

The dual Phoenix presentation gave the ships an opportunity to exercise their Aegis Combat Systems. The mission profile required both targets to be at their planned start points to commence their “attack” within 10 seconds of each other, at low altitude and a speed of 300kts.

In a statement, Air Affairs said: “To achieve this accuracy, the second target was launched precisely four minutes and 40 seconds following the first launch. The four person flight crew then carefully managed the speed of the second target to ensure the timing was achieved exactly as required by the Navy.

“Both targets flew faultlessly and turned precisely together to initially attack two of the ships. During the attack one target was commanded to break away and switch its attack profile in order to threaten the third ship. This switch was included purposely to help test the combat system response of all three destroyers.

**“BOTH TARGETS FLEW  
FAULTLESSLY AND  
TURNED PRECISELY  
TOGETHER”**

“Both HMAS *Hobart* and HMAS *Brisbane* then successfully fired a Standard Missile 2 each against the attacking Phoenix targets.

“Following the mission, the Navy congratulated the Air Affairs Australia target team and advised that the attack profiles were perfectly executed and were extremely happy with their results.”



The Phoenix dual launch tested the Aegis combat systems on RAN destroyers.

SUPPLIED





Myriota CEO and co-founder Dr Alex Grant, whose company is supporting the space services mission.

SUPPLIED

## SA LAUNCHES SPACE SERVICES MISSION

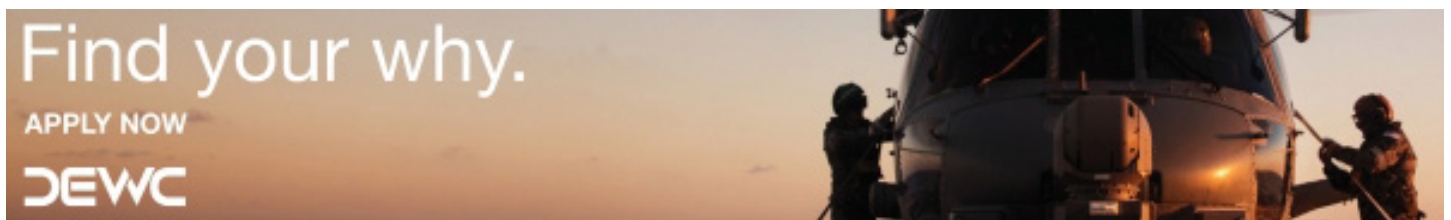
**SA Premier Steven Marshall has launched the \$6.5 million SASAT1 Space Services Mission to deliver space services to SA.**

**M**yriota will provide IoT space services for the new small satellite, which – once deployed – will support the improvement of state emergency, environment, water monitoring and bushfire mitigation services.

Research consortium SmartSat CRC will lead the mission and application prototyping, with satellite manufacturing company Inovor Technologies designing and building the satellite.

Once launched into low Earth orbit, the satellite will support data collection from ground based sensors plus Earth observation imaging via a hyperspectral electro-optical payload.

The mission will deliver the satellite in 15 months for launch into orbit, with the satellite available for a further three years to 2024 for data collection and operations.



Premier Marshall said that the project is central to the SA Growth State: Space Sector Strategy, which was announced in November.

“SA is embarking on a bold mission with industry to design and build a satellite to deliver space-derived services to the state – a venture never undertaken before by any State Government around the country,” Premier Marshall said. “Applications include using the data and imagery we collect to solve real life problems, like help-

ing farmers monitor water levels so they can more accurately predict future yields.

**“SA IS EMBARKING ON A BOLD MISSION WITH INDUSTRY TO DESIGN AND BUILD A SATELLITE TO DELIVER SPACE-DERIVED SERVICES TO THE STATE”**

“The SASAT1 Space Services Mission will deliver significant value to our state and to our local space industry as well as paving the way for growth in space-craft export, IoT sensor exports, Department of Defence and Australian Government space and defence-related projects and the South Australian supply chain.”

Myriota’s IoT connectivity will support the collection of data about multiple weather events, including rainfall and bushfires – both of which have been impacted by climate change in recent years.

Myriota CEO and co-founder Dr Alex Grant said that the mission provides a great opportunity for understanding the state’s environment, while simultaneously creating opportunities for collaboration across SA’s growing space ecosystem.

“Myriota is proud to be involved in the SASAT1 project, and to partner with space industry leaders Inovor Technology and, the SmartCat CRC, as well as the South Australian government,” Dr Grant said. “The Space Services Mission will benefit South Australians through the improved delivery of emergency services, and environmental monitoring.”

#### MOST READ ONLINE AT [WWW.AUSTRALIANDEFENCE.COM.AU](http://WWW.AUSTRALIANDEFENCE.COM.AU)



1. [Apache chosen as armed helicopter replacement](#)
2. [Hanwha launches the Redback IFV in Australia](#)
3. [ADM's Top 40 Defence Contractors 2020](#)
4. [US missile defence battle command system starts low rate production](#)
5. [SA commits to building Factory of the Future](#)

**CERTIFIED • STRONGER\***  
**FASTER • EFFICIENT**

\*National Association of Testing Laboratories. Learn more: <https://bit.ly/3QJ0AVn>



# 278 SQUADRON CLOSES MAINTENANCE TRAINING SUPPORT

Tools have been downed as No. 278 Squadron closed out its maintenance training support to Air Combat Group on December 17.

FLIGHT LIEUTENANT JESSICA ALDRED | DEFENCE

Established in 2003, No. 278 Squadron has trained thousands of Air Force technicians for the F-111C, Hornet, Hawk 127, PC-9/A, Super Hornet and the Growler at RAAF Bases Williamtown, Amberley, Pearce and Tindal.

Commanding Officer No. 278 Squadron, Squadron Leader Philip Irvine, said they were keen to mark the end of the era, but travel restrictions meant it was smaller than planned.

"We were unable to hold many of our planned commemorative activities in 2020, including our end of era dining in night," Squadron Leader Irvine said.

"But we marked the occasion by preserving one of our building signs and had a unit morning tea to share our memories and reflect on our achievements.

"Despite the twin challenges of preparing to close a unit, and the restrictions of COVID-19 in the final year, members maintained the same high standards, and kept unit morale high – they have done a fantastic job and I personally am very proud of them all."

Air Combat Group maintenance training will be delivered by No. 2 Operational Conversion Unit Integrated Training Centre at RAAF Base Williamtown and Headquarters Air Combat Group technical training flight at RAAF Base Amberley.

The squadron's workforce included Air Force and APS members. APS team member



Air Force's No. 278 Squadron marked its closure with the preservation of a building sign at RAAF Base Amberley, Queensland. DEFENCE



and Computer Managed Instruction Manager David Carseldine was the only founding member to still be in the squadron as it marked its final day.

"I joined Air Force as an electrical fitter in 1984, and in 1996 as a sergeant, I was posted to No. 481 Squadron field training flight which became 278 Squadron technical training flight on 1 July 2003," Carseldine said.

"I was in charge of teams to transfer Hornet courseware to a new system being implemented at the time, but this system was not sustainable and I was approached by the officer-in-charge to investigate a new solution.

"I was offered an APS position when uniform positions were civilianised and took the offer, discharging in October 1998."

Recently retired, Carseldine said he was proud to support Air Combat Group's maintenance training over the years.

"This was a significant event in my career with Air Force, we trained more than 37,000 students as many come through more than once," Mr Carseldine said.

"After 37 years with Air Force and the Australian Public Service, and 25 years of those with field training flight and 278 Squadron, I'm looking forward to no early starts in retirement."

**"AIR COMBAT GROUP  
MAINTENANCE TRAINING  
WILL BE DELIVERED BY NO. 2  
OPERATIONAL CONVERSION UNIT  
INTEGRATED TRAINING CENTRE"**

## CONTACT DETAILS

### MANAGING EDITOR

Katherine Ziesing  
T: 0419 014 308  
[katherineziesing@yaffa.com.au](mailto:katherineziesing@yaffa.com.au)

### ONLINE EDITOR

Ewen Levick  
T: 02 9213 8249  
[ewenlevick@yaffa.com.au](mailto:ewenlevick@yaffa.com.au)

### ASSOCIATE PUBLISHER

Kylie Leonard  
M: 0404 844 851  
[kylieleonard@yaffa.com.au](mailto:kylieleonard@yaffa.com.au)

### DESIGNER

Lauren Esdaile

### SUBSCRIPTIONS

Martin Phillpott  
Toll Free 1800 807 760  
[martinphillpott@yaffa.com.au](mailto:martinphillpott@yaffa.com.au)

### CONTRIBUTORS

Julian Kerr  
T: 0418 635 823  
[jhrhkerr@bigpond.net.au](mailto:jhrhkerr@bigpond.net.au)

Nigel Pittaway  
M: 0418596131  
[cnpittaway@bigpond.com](mailto:cnpittaway@bigpond.com)

### PUBLISHED BY

Yaffa Media Pty Ltd  
17-21 Bellevue St,  
Surry Hills NSW 2010  
T: 02 9281 2333  
[greatmagazines.com.au](http://greatmagazines.com.au)

### ADM CANBERRA OFFICE

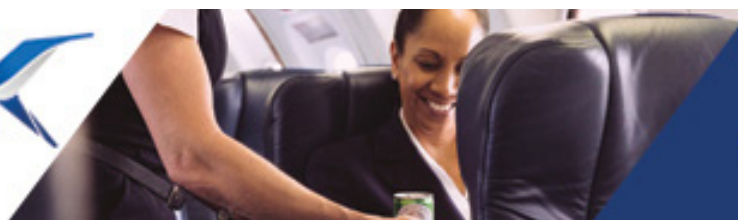
PO Box 4783, Kingston ACT 2604  
T: 02 6203 9535  
[australiandefence.com.au](http://australiandefence.com.au)

Copyright © 2021



SUBSCRIPTIONS [GREATMAGAZINES.COM.AU](http://GREATMAGAZINES.COM.AU) CALL 1800 807 760 EMAIL [SUBSCRIPTIONS@YAFFA.COM.AU](mailto:SUBSCRIPTIONS@YAFFA.COM.AU)

All material appearing in ADM is copyright. Reproduction in whole or in part is not permitted without permission in writing from the publisher. The publishers accept sole responsibility for the contents of this publication, which may in no way be taken to represent the views of the Department of Defence, the Australian Defence Force or any other agency of the Commonwealth of Australia.



**NEW** direct flights  
Canberra/Hobart &  
Canberra/Newcastle  
[linkairways.com](http://linkairways.com)



# FORTHCOMING EVENTS

## ADM EVENTS

More detail on ADM Events can be found on our [dedicated website](#).

- [ADM Congress](#) – 3 February 2021, NCC | Canberra and Online
- [Defence Estate and Base Services Summit](#) – 07 July 2021, Hotel Realm | Canberra
- [STEM in Defence Summit](#) – 16 August 2021, Emporium Hotel | Brisbane
- [Northern Australia Defence Summit](#) – 28 October 2021 | Darwin

## 43RD COSPAR SCIENTIFIC ASSEMBLY

**DATE** 28 Jan-4 Feb 2021  
**LOCATION** International Convention Centre Sydney  
**WEBSITE** [cospar2020.org](http://cospar2020.org)

The Australian space research community enthusiastically extends the invitation to you, to meet with us for COSPAR 2020, and in so doing to forge the friendships and opportunities that will connect space research for global impact. The 2020 Assembly will combine the latest in space research findings with activities designed to enrich the global space research community – including helping equip our future leaders, and workshoping with space industry – and inspire the next generation of scientists and engineers.

## MARCH 2021 AVIATION AUCTION

**DATE** 12 March 2021  
**LOCATION** 80 Beach Road, Lara, Victoria  
**WEBSITE** [australianfrontlinemachinery.com.au/march-2021-aviation-auction](http://australianfrontlinemachinery.com.au/march-2021-aviation-auction)

With Australian Frontline Machinery – This huge ex-Military Aviation Auction includes 8 Pilatus PC-9/A Aircraft, 4 Schleicher ASK 21 Mi Gliders, an Aermacchi MB-326 'Macchi' grounded Jet Training Aid and over 200,000 Spare Parts direct from ADF up for auction on the 12th March 2021. Please check individual listings for each aircraft. Inspection held on 15th – 19th March 2021\*. Inspection advised, video inspections available. \*Subject to change

## **LOCATE21**

**DATE** 30 March – 1 April 2021 (rescheduled dates)  
**LOCATION** Brisbane Convention and Exhibition Centre  
**WEBSITE** [locateconference.com/2021](https://locateconference.com/2021)

Due to COVID-19, Locate20 has been rescheduled for Locate21 happening in Brisbane March 30 – 1 April 2021. The event will focus on how geospatial technologies are intersecting with business, Government and defence to address national challenges. It's Australia's premier spatial conference with the inclusion of over 50 inspiring thought-leaders including speakers from government, academia, the defence force, technology, mining, natural resources and more. We believe this conference is of interest to defence personnel.

## **CHIEF OF ARMY SYMPOSIUM**

**DATE** 19-20 April  
**LOCATION** Brisbane Convention and Entertainment Centre

In previous years, the Chief of Army's Land Forces Seminar (CALFS) was an event focused on counterpart engagement and featured as part of the broader Land Forces Exposition. In 2021, the Chief of Army's Symposium (CAS) will replace CALFS and will include a number of activities focused on partnerships, technology, innovation and people. It is scheduled to be held at the Brisbane Convention and Entertainment Centre over the period 19-20 April.

## **HUNTER DEFENCE CONFERENCE**

**DATE** 22-23 April 2021  
**LOCATION** Crown Plaza, Hunter Valley  
**WEBSITE** [www.hunterdefence.org.au](http://www.hunterdefence.org.au)

The Hunter Defence Conference will be held in April next year at the Crown Plaza in the Hunter valley. More details will be available soon.

## **LAND FORCES 2021**

**DATE** June 1-3 2021  
**LOCATION** Brisbane Convention Centre  
**WEBSITE** [landforces.com.au](http://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.

## **ROTORTECH 2021**

**DATE** 15-17 June 2021  
**LOCATION** Royal International Convention Centre, Brisbane  
**WEBSITE** [rotortech.com.au](http://rotortech.com.au)

The new dates for Rotortech will be Tuesday 15 June to Thursday 17 June 2021. The venue, the Royal International Convention Centre in Brisbane, is unchanged. Rotortech is the region's premier helicopter and unmanned flight systems showcase and forum, featuring more than 100 participating companies and key speakers from industry and government. We believe that deferring Rotortech to its new June 2021 dates will achieve this goal by moving the event to a time where the COVID situation will have improved and the current uncertainties will have passed.

## **PROJECT AND PROGRAM MANAGEMENT SYMPOSIUM**

**DATE** 10 – 12 August 2021 (rescheduled dates)  
**LOCATION** Canberra Rex Hotel  
**WEBSITE** [pgcsymposium.org.au](http://pgcsymposium.org.au)

Foresight is more valuable than hindsight! PGCS 2020 is designed to help project and program managers, and their sponsors and senior managers, develop the skills and understanding needed to deliver projects success in the next decade. Creating the organisational capability needed to underpin the consistent delivery of successful projects in the 2020's starts at the top. Now in its 8th year, PGCS 2020 will focus on ways to build the foundations needed to create project and program success

**AVALON 2021**

**DATE** 23-28 November 2021  
**LOCATION** Avalon Airport

The Australian International Airshow and Aerospace & Defence Exposition is one of Asia-Pacific's most prestigious aviation and aerospace events and the most comprehensive aviation, aerospace and defence exposition in the southern hemisphere. Avalon hosts multiple concurrent conferences and expo streams, across the spectrum of Defence, Airlines, Business and General Aviation, Sport and Recreational Aviation, Airports, MRO, Space, Unmanned Systems, Air Safety and Ground Equipment.

**2022****INDO PACIFIC 2022**

**DATE** 12 May 2022  
**LOCATION** ICC Sydney  
**WEBSITE** [pacificexpo.com.au](https://pacificexpo.com.au)

INDO PACIFIC, the biennial International Maritime Exposition, will combine an extensive exhibition presence, a comprehensive conference program and a schedule of networking and promotional opportunities. It will be the 12th iteration of this internationally renowned event, and will be a critical link event for Defence, government and industry as Australia defines how it will invest \$90 billion on new ships, submarines and their systems and support.

**VARIOUS DATES****ASDEFCON TD /IP ONLINE COURSES**

**DATE** Various  
**LOCATION** Online  
**WEBSITE** [defence@majortraining.com.au](mailto:defence@majortraining.com.au)

Defence have begun online delivery of its short course on the Technical Data / Intellectual Property (TD/IP) clauses in its ASDEFCON suite of templates. These clauses provide far more flexibility and scope to deal with TD/IP issues than the previous ones. Defence will offer a number of spaces to Defence Industry on each online course to ensure the new TD/IP regime is successfully adopted by industry. These positions are centrally funded by Defence.



## NSW DEFENCE INNOVATION NETWORK'S REGIONAL ROAD SHOW

**DATE:** Various

**LOCATION:** Various

**WEBSITE:** [defenceinnovationnetwork.com/din-regional-road-show-2019-20](https://defenceinnovationnetwork.com/din-regional-road-show-2019-20)

NSW Defence Innovation Network and AIDN will be undertaking a series of small business focused regional forums across NSW. Register to attend and hear about the programs, grants, opportunities and services the NSW Defence Innovation Network (DIN) provides to the small business community across NSW. We encourage small businesses to engage with us and participate in opportunities across our networks, including DIN's seven partner universities, as well as with other state and federal agencies.

## ICCPM ONLINE WORKSHOPS

**DATE** Various

**LOCATION** Online

**WEBSITE** [iccpm.com/online-workshop-webinars](https://iccpm.com/online-workshop-webinars)

Designed to support project teams who are experiencing new challenges due to COVID-19 concerns – Learn how to mitigate new risk levels, effectively deploy virtual teams, manage messy problems and more. ICCPM Online Workshops and Webinars provide you with an easily accessible and engaging option to continue your training from anywhere in the world. These options provide you and your team with a conducive learning environment to support your complex project success.

## ICCPM ROUNDTABLE WORKSHOPS

**DATE** Various

**LOCATION** Various

**WEBSITE** [iccpm.com/2020-rs](https://iccpm.com/2020-rs)

ICCPM, with Series Partner QUTeX, is pleased to confirm the upcoming Workshops for the 2020 International Roundtable Series Harnessing Emergence in Complex Projects: Risk, Uncertainty and Opportunity. The International Roundtable Series is an exciting Thought Leadership initiative where senior practitioners and leading academics come together and discuss the Series Theme to produce new insights and practical steps to improve complex project success. Registrations for in-person workshops are strictly limited to comply with COVID-19 venue safety guidelines. Please refer to each event page for more details.