



All eight ANZAC class ships were fitted for towed arrays but never received them.

DEFENCE

ANZAC CLASS FRIGATES TO GET TOWED ARRAY SONAR SYSTEMS

Some 16 to 21 years after commissioning, the RAN's eight Anzac-class frigates are to be equipped with towed array sonar systems.

JULIAN KERR | SYDNEY

The first of the class, HMAS Anzac, was commissioned in 1996 and the latest, HMAS Perth, was commissioned in 2006. All eight ships were fitted for towed arrays but never received them, despite their role as the RAN's main anti-submarine warfare (ASW) platform.

In a 21 March notification on the AusTender website, Defence said a Request for Information (RFI) would be released "within the month" in relation to Project Sea 1408, a consolidation of Sea 1408 Phase 3 Torpedo Self Defence and Project Sea 5014 Phase 2 Anzac Towed Array Sonar.

"The project seeks to identify and delivery new

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generation anti-submarine warfare (ASW) and torpedo self-defence (TSD) capability to the Royal Australian Navy surface fleet,” the notification stated.

“The introduction of the ASW improvements is to help maximise an individual ship’s ability to detect and defeat submarine and torpedo threats and improve platform survivability. Integration of these capabilities elements with the platform’s Combat Management System will be pursued to provide a networked system for maritime task groups,” the notification added.

The first of four capability elements would deliver what was described as a Depressed Towed Array Sonar to the Anzac-class to improve the submarine detection capability of the platform “as well as to enable development of ASW training, tactics and doctrine ahead of the introduction of the Hunter-class frigate.”

The three other capability elements would be delivered both to the Anzac-class and to the RAN’s three Hobart-class Air Warfare Destroyers, and would inform future integration of AWD/TSD systems and operations into the wider surface fleet.

These comprised torpedo detection-classification-localisation – to identify, classify and track torpedo threats; soft-kill torpedo countermeasures – to confuse, distract and seduce a torpedo away from an intended target; and hard kill – to destroy or disable a torpedo threat, for example an anti-torpedo torpedo.

The notification said the RFI would focus on obtaining key strategic information, solutions and industry’s approach to achieving the technical requirements, but gave no scheduling details.

ADM Comment: The decision to upgrade the Anzacs’ ASW capability at this time is likely to have flowed from the decision to extend their service life as the Hunter-class future frigates are rolled out, with the last of the Anzacs now set to remain in commission until 2042-43.

“THE FIRST OF FOUR CAPABILITY ELEMENTS WOULD DELIVER WHAT WAS DESCRIBED AS A DEPRESSED TOWED ARRAY SONAR TO THE ANZAC-CLASS



OUTLANDER SOLUTIONS PARTNERING WITH UNSW AND THALES AUSTRALIA ON COMMS PROTECTION CRC

Canberra based micro-SME Outlander Solutions is partnering with Thales Australia and University of NSW in Canberra as part of the Cooperative Research Centre (CRC) Round 11 Program. The CRC program supports industry led collaborations between industry and research organisations with matched government funding.

KATHERINE ZIESING | CANBERRA

This CRC proposal is aimed at developing and demonstrating innovative technology solutions that will protect Industry and Government's critical infrastructure and communications networks.

"We are very proud and excited to be leading the CRC proposal and partnering with Thales Australia and the University of NSW," Bevan Jones, Outlander Solutions' Managing Director said. "The Canberra-based CRC team brings together significant technical depth and highly relevant subject matter expertise, and also builds on Australian sovereign industry capability."



The proposal is aimed at developing technology solutions to protect critical infrastructure and communications networks. DEFENCE

"Outlander Solutions has developed a range of innovative technology and the CRC proposal provides us with an opportunity to work with leading Australian Industry and University sector partners.

**"THIS IS A VERY EXCITING PROSPECT
GIVEN OUR NEED FOR REAL-TIME
CRITICAL SERVICES"**

"Our objective is to develop and demonstrate innovative and exciting technology solutions that will protect critical infrastructure from ongoing threats and cyber-attack, whilst also ensuring network resilience and performance optimisation. This is a very exciting prospect given our need for real-time critical services."

Outlander Solutions is 100 per cent Australian owned and operated company that designs, develops and builds advanced communications and intelligence technology solutions. Outlander Solutions also provides strategic advisory and management consulting services to Defence and Government as well as being part of the C4 Edge collaboration with Army Headquarters.

SUPACAT SELECTS SIEMENS SOFTWARE FOR LAND 400

Supacat has selected Siemens software to boost their engagement with Rheinmetall on the Land 400 program.

The use of design lifecycle management and supply chain integration capabilities of Siemens' Teamcenter software and NX software for computer-aided design (CAD) will reportedly help Supacat align their engineering processes with Rheinmetall, strengthen data governance and improve overall efficiency.



Siemens' Xcelerator software portfolio is widely used across industries including automotive, aerospace, shipbuilding and high-tech electronics.

SIEMENS

The implementation has been funded by the Federal Government's Sovereign Industrial Capability Priority Grant given to Supacat last year. The same software suite that is part of Siemens' Xcelerator portfolio was also recently chosen by the US Air Force to standardise their digital journey and product lifecycle management.

"Implementation of this system allows us to integrate more closely with the Rheinmetall Land 400 team and that lowers the barriers to the Australian supply chain entering the program," Michael Halloran, Managing Director Asia Pacific for Supacat, said.

**"TEAMCENTER WILL ALLOW
SUPACAT TO MANAGE ALL
ENGINEERING DESIGN WORKFLOW
AND APPROVAL PROCESSES,
DATA AND SUPPORTING
DOCUMENTATION IN AN
INTEGRATED SINGLE SOURCE"**

Supacat will use NX to model and analyse products in 3D in a process that is integrated into the Teamcenter PLM system. Teamcenter will allow Supacat to manage all engineering design workflow and approval processes, data and supporting documentation in an integrated single source.

Samantha Murray, Managing Director of Siemens Digital Industries Software in the region, said that the implementation was a key step for the Australian defence industry.

"It's great to collaborate with local Australian companies like Supacat doing innovative work that helps them connect to global supply chains," Murray said. "We're also excited about helping upskill their staff on world-leading technology."

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DISCOVER MORE



UniSA Vice Chancellor Prof David Lloyd with Nova Group CEO Jim McDowell, along with UniSA graduates & now Nova employees Paul Summerton and Katrin Horsey. SUPPLIED

NOVA SYSTEMS PARTNERS WITH THE UNIVERSITY OF SA

In an effort to support Australia's growing space, defence and national security capabilities, Nova Systems and the University of South Australia (UniSA), have committed to explore opportunities for collaboration.

Nova Group CEO Jim McDowell and UniSA Vice Chancellor Professor David Lloyd signed a Memorandum of Understanding (MoU) this week in a commitment to working closely over the next five years in industries critical to the state's economy.

The MoU is focused on growing the future pipeline of engineers and conducting industry and academic exchanges in emerging technology areas, with a particular emphasis on defence, national security and space.

It will see the organisations collaborate in a range of areas, including: staff and student placement opportunities including options to grow Nova's award-winning Graduate Program; collaboration in research development and technology focused on defence, national security and space; and joint development of training, education and short courses in support of defence, national security, and space industrial capability.

"We are invested in working closely with academia to grow and sustain local smarts to solve complex challenges and keep our world safe and secure," McDowell said. "This initiative will provide more opportunities for young Australians to gain industry insight,

while at the same time studying at university, furthering the Australian Government's efforts to create and sustain a local workforce of the future.

"By exchanging ideas and sharing best practice, students will gain new ideas about how to convert their learnings into practical solutions to support future capability requirements in the defence, national security and space domains."

**"STUDENTS WILL GAIN NEW IDEAS
ABOUT HOW TO CONVERT THEIR
LEARNINGS INTO PRACTICAL
SOLUTIONS"**

Collaboration in developing external short courses which support developing industrial capabilities will also be explored, including leveraging Nova's established training in core capabilities.

UniSA Vice Chancellor Professor David Lloyd said the MOU would enable collaboration on world-class research and the provision of employment opportunities for graduates.

"The defence industry is a critical part of the SA economy – it's essential that, as a university, we work closely with industry to educate a local, high-tech defence workforce for the future," Professor Lloyd said.



HMAS *Pirie* enters Darwin for the last time.

DEFENCE

HMAS *PIRIE* DECOMMISSIONS

**The RAN decommissioned Armidale Class Patrol Boat
HMAS *Pirie* last Friday after 15 years of service.**

Chief of Navy Vice Admiral Michael Noonan addressed the ceremony and recognised the valuable contribution made by the men and women who have served in *Pirie*.

"HMAS *Pirie* and her Ship's Company have lived up to the ship's motto "mark of quality." They have served the people of Australia, protecting our nation's borders and offshore maritime interests with dedication and professionalism," VADM Noonan said. "*Pirie* is the first of two Armidale Class patrol boats to be decommissioned this year as we transition to our 12 Arafura Class Offshore Patrol Vessels (OPVs).

"While there is a nostalgia in farewelling one of our workhorses, it is an exciting time to serve, as Navy undergoes the most significant recapitalisation of the fleet.

"The new Arafura Class OPVs will provide a significant increase in capability and enhance our capacity to patrol our maritime territory and near region."

**"*PIRIE* HAS SAILED MORE
THAN 426,000 NAUTICAL MILES
IN HER LIFETIME"**

HMAS *Pirie* Commanding Officer Lieutenant Commander Sean Dalton said it had been a privilege bringing *Pirie* and her crew home for the last time.

"*Pirie* has sailed more than 426,000 nautical miles in her lifetime, travelling from as far east as Samoa, west to the Cocos Keeling Islands, south to the Bass Strait, and as far north as Qingdao, China," Lieutenant Commander Dalton said.

Pirie conducted intercept and control of both foreign fishing vessels and suspected irregular entry vessels, along with regularly providing support to the civil community. She has also taken part in diplomatic, ceremonial and commemorative events with Australia's regional partners.

ADM Comment: The Armidale class over their lifetime have been much maligned in terms of the capability and availability they offered the RAN. This however is unfair in many ways given that the ships were asked to perform well beyond their design scope under circumstances that were not envisioned by their designers. *Pirie* and her crew over her 15 year life have a lot of to be proud of.

CONTACT DETAILS

MANAGING EDITOR

Katherine Ziesing
T: 0419 014 308
katherineziesing@yaffa.com.au

ONLINE EDITOR

Ewen Levick
T: 02 9213 8249
ewenlevick@yaffa.com.au

ASSOCIATE PUBLISHER

Kylie Leonard
M: 0404 844 851
kylieleonard@yaffa.com.au

DESIGNER

Lauren Esdaile

MULTIMEDIA ASSISTANT

Roya Ghodsi
M: 0458 484 619
royaghodsi@yaffa.com.au

SUBSCRIPTIONS

Martin Phillpott
Toll Free 1800 807 760
martinphillpott@yaffa.com.au

CONTRIBUTORS

Julian Kerr
T: 0418 635 823
jhrhkerr@bigpond.net.au

Nigel Pittaway

M: 0418596131
cnpittaway@bigpond.com

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greatmagazines.com.au

ADM CANBERRA OFFICE
PO Box 4783, Kingston ACT 2604
T: 02 6203 9535
australiandefence.com.au

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KONGSBERG SIGNS NEW AGREEMENT TO SUPPLY F-35 PROGRAM

Kongsberg Defence & Aerospace (KDA) has signed a new agreement with Lockheed Martin worth \$260 million for the F-35 Joint Strike Fighter program production lots 15-17.

The agreement includes delivery of the F-35 rudders, Vertical Leading Edges and Main Landing Gear Closeout panels for more than 500 aircraft. Production of these parts will continue through 2025.

"This latest contract is a reflection of Kongsberg's long lasting partnership and support of the F-35 program," Terje Bråthen, EVP Aerostructures at KDA, said. "The F-35

production program is now at full rate production and this contract secures work for the next four years, as well as positioning us for continued participation in future production lots."

"THIS CONTRACT SECURES WORK FOR THE NEXT FOUR YEARS"

According to Lockheed Martin, Norwegian industry provides components including air-to-air pylons, rudder and vertical fin leading edges, carbon composite panels, and completed and

coated horizontal and vertical tails to the global program. Eighteen Norwegian companies have served as Tier 1 F-35 suppliers with nine currently active.

In March last year, Norway's F-35s were scrambled for the first time to intercept Russian maritime reconnaissance and ASW aircraft, which regularly conduct flights towards strategic maritime chokepoints in the North Atlantic.

Norway intends to operate a full fleet of 52 F-35s by 2025, which are a variant aircraft that includes a drag chute to assist in icy landings.



The agreement includes delivery of the F-35 rudders, Vertical Leading Edges and Main Landing Gear Closeout panels for more than 500 aircraft. KONGSBERG

CSIRO PLAYS PART IN US NEXT-GEN SOLAR THERMAL TECHNOLOGY

The US government has announced it will fund a pilot-scale test facility to demonstrate a next-generation concentrated solar thermal (CST) technology that Australia helped develop.

It is a simple, thermally stable and relatively low-cost system with applications for power generation and heat processing across mining, mineral processing, chemical processing and other high temperature industrial processes.

Australia's involvement was managed through the Australian Solar Thermal Research Institute (ASTRI), a 10-year, \$100 million international research collaboration funded (50 per cent) by the Australian Renewable Energy Agency (ARENA).

Australia's national science agency, CSIRO, has been one of the main external contributors to the falling particle technology being developed by US based Sandia Laboratories, which will receive US\$25 million from the US Department of Environment to aid in the construction of a demonstration plant in Albuquerque, New Mexico.

The Sandia falling particle system has been developed over the past two years with significant input from Australia, including CSIRO, the Australian National University and the University of Adelaide.



CSIRO's National Solar Energy Centre in Newcastle is used for developing high temperature concentrating solar thermal technology.

CSIRO

MOST READ ONLINE AT WWW.AUSTRALIANDEFENCE.COM.AU

1. [Shortlist announced for Sea 129 Phase 5](#)
2. [Naval Group commits to 60 per cent local contract spend to boost Australian industry](#)
3. [Peter Dutton replaces Linda Reynolds as Defence Minister](#)
4. [War with China is not inevitable](#)
5. [Companies line up for potential Hawk replacement opportunity](#)

CSIRO, through ASTRI, has also built its own pilot-scale falling particle system at its Newcastle solar energy facility.

Wes Stein, ASTRI Chief Technology Officer and CSIRO Solar Thermal Research Manager, said CSIRO is expecting to test its falling particle system using concentrated sunlight in the next few weeks.

“THE FALLING PARTICLE CST TECHNOLOGY IS 100 PER CENT RENEWABLE AND CAN STORE MULTIPLE HOURS OF THERMAL ENERGY”

“We are delighted that our US colleagues have selected this technology as the pathway forward for CST technology,” Stein said. “We have been working closely with the US for several years on the next generation of CST technology and the US decision reflects our efforts and recognises Australian contributions to the development of this system.”

The technology involves a falling curtain of small

particles which is heated by concentrated sunlight.

The particles are heated to well over 700 degrees centigrade and then stored as thermal energy for use day or night, to generate electricity or to provide high temperature industrial process heat. Temperatures over 1,000 Celsius are possible depending on the process. This next phase of the US project will design and test a megawatt-scale thermal falling particle CST system. As a demonstration project it will have the potential to operate for thousands of hours and has been designed for over six hours of energy storage at temperatures well over 700 degrees.

**Congratulations to the RAAF
on 100 years of operational excellence.**

**NORTHROP
GRUMMAN**



COMMANDO WELFARE TRUST PROVIDES A SAFETY NET FOR VETERANS

In June 2010, Renee Wilson's fiancée Gary was critically wounded in a Black Hawk accident that killed three Commandos and wounded six others in what was to date the largest single loss of life in Australia's war in Afghanistan.

He spent two and a half months in a coma and was given a four per cent chance of survival, but eventually made as full of a recovery as possible.

Renee told the story to a Commando Welfare Trust dinner in Sydney attended by ADM.

"The Afghanistan War arrived at my home, with all of its chaos, nightmares and fears on 21 June 2010," Renee said. "A sinking feeling earlier that evening told me something bad had happened and Gary was involved.

"As I feared becoming a statistic, becoming the widow the nation feels sorry for, my private pain now very public - I knew one thing for sure – I would never walk alone. I knew no matter what, I would be able to count on the Commando family, Gary had taught me this. He made sure I knew this before that day in February. Just in case I would ever face a day like this one.

"I vowed to do everything I could, everything within my power to bring him back because without him, I didn't think I could survive. It felt like my heart would actually break if I had to let him go and I couldn't let that happen and thankfully it didn't.



A special forces soldier from 2nd Commando Regiment reaches out for the rope to support other soldiers fast-roping onto a Sydney ferry from an Army MRH-90 Taipan.

DEFENCE

PEOPLE ON THE MOVE

Dr Carl Seubert, a Senior Aerospace Engineer at NASA's Jet Propulsion Laboratory (JPL) has been appointed as the Chief Research Officer at SmartSat CRC. He has been a key figure in high profile NASA missions including the Perseverance rover landing on Mars in February.

InVeris Training Solutions has appointed Al Weggeman as CEO, effective April 5, 2021. Weggeman has more than 20 years of experience leading top-performing teams to deliver sustained growth in engineered component and product businesses serving military, law enforcement, and other customers.

Marcus Thompson has joined Penten's Board of Directors, bringing with him over 30 years of experience in the ADF. His most recent job in Defence was as the inaugural head of the Information Warfare Division.

"Despite the odds, despite the prognosis, Gary has made as full a recovery as possible and joins us here tonight.

"When I reflect now on what happened 10 years ago, the first thing that comes to me is how many people in this room and helped me stand while my best friend was lying in front of me, unconscious and with an uncertain future. For this I am grateful beyond words.

"I am also grateful, that the 'commando for life' mantra rings true. Particularly where the Trust is concerned," Renee said.

**"THE TRUST AND INDEED ANY OTHER
FORM OF SUPPORT SYSTEM LIKE IT
IS A SAFETY NET"**

"We were there a little over 10 years ago when the Trust was launched. An initiative that promised a future for the children whose fathers didn't come home, for those that had been severely injured and for the spouses whose lives were turned upside down. I stood proud that night, particularly so given the devastation left behind by the Afghanistan War. There was some hope."

The Commando Welfare Trust provides hardship support to veterans of all Australian special forces units and their families outside the scope of existing Defence and non-Defence schemes such as DVA or Legacy. More information is available at commandotrust.com

CHANGING OUR WORLD



FORTHCOMING EVENTS

ADM EVENTS

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

- [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

DARWIN DEFENCE INDUSTRY FORUM

DATE: 7 April 2021
LOCATION: Hilton Hotel, Darwin
WEBSITE: <https://www.eventbrite.com.au/e/darwin-defence-industry-forum-tickets-148464347861>

With attendance and address by The Hon Melissa Price, Minister for Defence Industry, this free 2 hour Forum will provide information for Australian organisations wanting to learn more about Defence business opportunities in the NT. The program will include presentations on estate & infrastructure, capital acquisition and sustainment, science & technology and innovation.

ALICE SPRINGS DEFENCE INDUSTRY ROUND TABLE FORUM

DATE: 8 April 2021
LOCATION: Hilton Hotel, Alice Springs
WEBSITE: <https://www.eventbrite.com.au/e/alice-springs-defence-industry-round-table-forum-tickets-148464975739>

With attendance and address by The Hon Melissa Price, Minister for Defence Industry, this free 2 hour Round Table Forum will provide information for Australian organisations wanting to learn more about Defence business opportunities in the NT. The program will include talks on estate & infrastructure, capital acquisition and sustainment, science & technology and innovation.

SYSTEMS ENGINEERING—ADVANCED

DATE 12-16 April 2021

LOCATION Online

WEBSITE edvirtus.com/courses/systems-engineering-and-project-management/systems-engineering-advanced

Systems Engineering—Advanced begins with our three-day Systems Engineering--Introduction course and follows with a two-day practicum that provides attendees with the opportunity to reinforce and the material covered in the introductory course. In addition to providing, Systems Engineering—Advanced also provides further detail on the early stages of the system life cycle, particularly Conceptual Design. The practicum then takes attendees through a number of design exercises that illustrate the application of systems engineering processes in a variety of contexts without assuming any prior knowledge of any particular development domain.

CHIEF OF ARMY SYMPOSIUM

DATE 19-20 April 2021

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.

TACTICAL ELECTRONIC WARFARE

DATE 19-21 April 2021

LOCATION Online

WEBSITE edvirtus.com/courses/military-systems/tactical-electronic-warfare

The Tactical Electronic Warfare course provides attendees with an understanding of the issues associated with the design and operation of tactical electronic warfare (EW) systems in the modern battlespace. Both communications EW and non-communications EW are discussed. No prior military or technical knowledge is required. Attendees receive a copy of the presenters' book: Tactical Electronic Warfare.

ARMY ROBOTICS EXPOSITION 2021

DATE 20 April 2021

LOCATION Brisbane Convention and Entertainment Centre

Army is hosting the Army Robotics Exposition 2021 (ARX 2021) to facilitate observation and demonstration of RAS concepts and technologies. ARX 2021 will provide an opportunity for Defence personnel including Capability Manager Delegates to view available technologies and innovations which may be applied to the future operating environment.

TRUSTED AUTONOMOUS SYSTEMS SYMPOSIUM 2021

DATE 20-22 April 2021

LOCATION Townsville

WEBSITE tasdcrc.com.au/symposium2021

Trusted Autonomous Systems is pleased to launch information and registrations for the Accelerating Trusted Autonomous Systems Symposium, 20-22 April 2021 at 'The Ville' Townsville. There will be a breadth of perspectives on offer and interactions for those in academia and industry to senior Australian Defence Force (ADF) in leadership roles in Robotics, Autonomous Systems and Artificial Intelligence (RASAI). The Symposium is focussed toward a physical audience with a comprehensive technical capability to support virtual attendance and participation.

HUNTER DEFENCE CONFERENCE

DATE 22-23 April 2021

LOCATION Crown Plaza, Hunter Valley

WEBSITE 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.

RADAR FUNDAMENTALS

DATE: 26 – 28 April 2021

LOCATION: Virtual

WEBSITE: <https://www.edvirtus.com/courses/military-systems/radar-fundamentals>

Dr Ian Faulconbridge presents an edVirtus professional education course, Radar Fundamentals, which provides attendees with a basic but complete coverage of modern radar technology and associated environmental issues. The course concentrates on key radar system function/performance characteristics and associated constraints whilst avoiding the complex mathematics often associated with the topic.

D.START IGNITE WINTER 2021

DATE: 24 May - 19 July 2021

LOCATION: Online

WEBSITE: <https://www.business.gov.au/cdic/news-for-defence-industry/dstart-ignite-applications-now-open>

D.Start is an innovation and entrepreneurship program that empowers Australian researchers and small to medium businesses to connect with Defence, identify real-world science or technology applications, and attract the resources needed to translate the application to a capability. The D.Start Ignite program is an eight-week hands-on learning experience designed for research teams of 2 to 5 members to work on projects with the potential to shape Australia's security or give our Defence Force an edge.

FUNDAMENTALS OF COMMUNICATIONS SYSTEMS

DATE: 17 – 19 May 2021

LOCATION: Online

WEBSITE: <https://www.edvirtus.com/courses/communications-systems/fundamentals-of-communications-systems>

Dr Mike Ryan presents an edVirtus professional education course, Fundamentals of Communications Systems, which introduces attendees to the fundamental principles, concepts, technologies, and systems associated with modern communications systems. No prior technical or communications knowledge is assumed—in fact, the course is ideally suited to those who do not necessarily have a technical background. Attendees receive a copy of the presenter's book Fundamentals of Communications and Information Systems.

LAND FORCES 2021

DATE June 1-3 2021
LOCATION Brisbane Convention Centre
WEBSITE 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 2021 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

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.

BRISBANE AIRSHOW

DATE: 3 – 4 July 2021
LOCATION: Watts Bridge Memorial Airfield, Cressbrook QLD
WEBSITE: <http://www.brisbaneairshow.com.au>

This year commemorating "Airforce 100", the Brisbane Airshow has one of the world's most stunning backdrops, set in the Brisbane Valley, 60 minutes' drive from Brisbane. Dedicated to the men and women who have served in our armed forces, the show includes Airforce, Warbirds, World War II Fighters, Jets, Helicopters, Aerobatics, Skydiving, Military Vehicles, Hot Rods, Classic Cars, Aviation Expo, Somerset Business Expo, Live Music, Gourmet Food, Amusement Park and lots more.

SUBMARINE INSTITUTE NUCLEAR SEMINAR 2021

DATE 15 July 2021
LOCATION Australian Strategic Policy Institute Auditorium
WEBSITE submarineinstitute.com/events/Nuclear-Seminar

In October 2019 the Submarine Institute of Australia and UNSW, hosted a single day seminar, aimed at stimulating national discussion on a holistic approach to a nuclear industry. The 'conversation' is to be continued with the next seminar focusing more specifically on nuclear propulsion for submarines and the associated industry. Nuclear powered propulsion should be considered as an option for submarines entering service at some time in the 2040s and beyond.

PROJECT AND PROGRAM MANAGEMENT SYMPOSIUM

DATE 10-12 August 2021 (rescheduled dates)
LOCATION Canberra Rex Hotel
WEBSITE pgcsymposium.org.au

Foresight is more valuable than hindsight! PGCS 2021 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 2020s starts at the top. Now in its 8th year, PGCS 2021 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
WEBSITE www.airshow.com.au/airshow2021

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

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.

2022 MARITIME ROBOTX CHALLENGE

DATE 11-17 November 2022
LOCATION Sydney International Regatta Centre
WEBSITE dst.defence.gov.au/event/2022-maritime-robotx-challenge

Robonation and Defence Science and Technology Group are hosting the 2022 Maritime RobotX Challenge, an international autonomous maritime robotic vehicles competition. This competition will give teams of university students a unique opportunity to develop their autonomy skills. Using the WAM-V surface craft, participants will develop an autonomous maritime system that will be put through its paces in a series of tasks in the maritime domain.

VARIOUS DATES

ASDEFCON TD /IP ONLINE COURSES

DATE Various
LOCATION Online
WEBSITE 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.

ICCPM ONLINE WORKSHOPS

DATE Various
LOCATION Online
WEBSITE 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.