

ADM **DEFENCE WEEK**

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HMAS Parramatta during training exercises on the Coral Sea at dawn.

DEFENCE

ANAO releases Anzac sustainment report: Scheduling still an issue

Katherine Ziesing | Canberra

The Australian National Audit Office (ANAO) released its [report](#) into Anzac class sustainment last week.

With the class half way through its Life of Type, the report notes that whilst “the Anzac class frigates are meeting Navy’s current capability requirements and continue to be deployed on operations in Australian, Middle Eastern and Asia-Pacific waters, Defence has been aware since at least 2012 that sustainment arrangements have not kept pace with higher than expected operational usage.

“Further, Defence cannot demonstrate the efficiency or outcomes of its sustainment arrangements, as the necessary performance information has not been captured.

“Defence will need to address relevant shortcomings in its sustainment arrangements to meet the requirement that the Anzac class remain in service for an extra 10 years to 2043, pending the entry into service of the replacement Hunter class.”

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Sustainment efforts are being conducted under the Warship Asset Management Agreement (WAMA), which is an alliance between BAE Systems, SAAB Australia, Naval Ship Management (NSM) and the Commonwealth with support from CEA Australia for the various CEAFAAR elements.

Broadly, the latest efforts on HMAS *Perth* (work now complete) and now [HMAS Arunta](#) have included:

- Upgraded ventilation systems;
- New sewage systems;
- Improvements to the Control and Monitoring System,
- Engine modifications to improve power and efficiency; and
- A new communications suite (Sea 1442).

“Defence has not managed to align the operational requirements of the class with their needed maintenance efforts”

The ANAO report notes that Defence has not managed to align the operational requirements of the class with their needed maintenance efforts, and has known about the issue since 2012 while effectively doing nothing about it.

In 2015, Navy delayed expenditure on three Anzac class frigates’ sustainment to address funding pressures. HMAS *Anzac* had \$600,000 of maintenance tasks deferred, and HMA Ships *Perth* and *Ballarat* each had \$3 million of maintenance tasks deferred. Navy was aware that delaying expenditure on maintenance tasks would ‘result in deferred maintenance creating a large body of outstanding work and associated cost and risk to seaworthiness’.

The report is also blunt in its assessment of Defence’s ability to manage this process effectively: “Defence’s advice to the government to extend the Anzac class’ life-of-type to 2043 was not based on a transition plan or informed by an analysis of the frigates’ physical capacity to deliver the required capability until then. Navy will need to address potential risks, relating to the frigates’ material condition, to maintain seaworthiness and capability.”

Performance of the contract is also an issue, with most of the Key Performance Indicators reported against consistently unmet in 2017-2018. It must be noted, however, that during the time of the ANAO snapshot, WAMA was in the middle of its 18-month time of transition in the wake of the [ASMD framework](#).

Buried in the footnotes was another observation. In October 2017, HMAS *Perth* was scheduled to be reactivated following the completion of scheduled maintenance; however, it remains in lay-up due to crew shortages. Navy has advised a crew is expected to become available between July 2019 (medium confidence) and January 2020 (high confidence).

Of the five recommendations made in the report, Defence is happy to go with three of the five and the other two with qualifications.

ADM Comment: As always, ANAO reports are but a snapshot of a particular time and all the caveats that covers. Worryingly, why is Navy having trouble crewing its signature in-service fleet? And yet materiel ready days are hitting their marks.

Also of note is the observation about Defence’s leverage of BAE Systems Australia, arguably as both the largest shipbuilder and sustainer in the small Australian market.

“Why is Navy having trouble crewing its signature in-service fleet?”

“An additional consideration relates to the designer and builder of the new Hunter class frigates (BAE Systems Australia) also being a key member of the Anzac class frigates sustainment Alliance,” the report notes.

“In transitioning from the Anzac class to the Hunter class frigates, Defence’s commercial leverage over BAE Systems for any cost or schedule overruns in the Hunter class design and build will be limited due to the existing commercial relationship with BAE Systems to sustain the Anzac class.

“For example, any liquidated damages applied to BAE Systems for underperformance on the Hunter class program, may be offset by the benefit received by BAE Systems through the extended sustainment of the Anzac class. The ANAO found no arrangement within the WAMA contract to deal with this issue.”

In a nutshell, whatever happens in the frigate realm for both the old and new fleets, BAE wins.

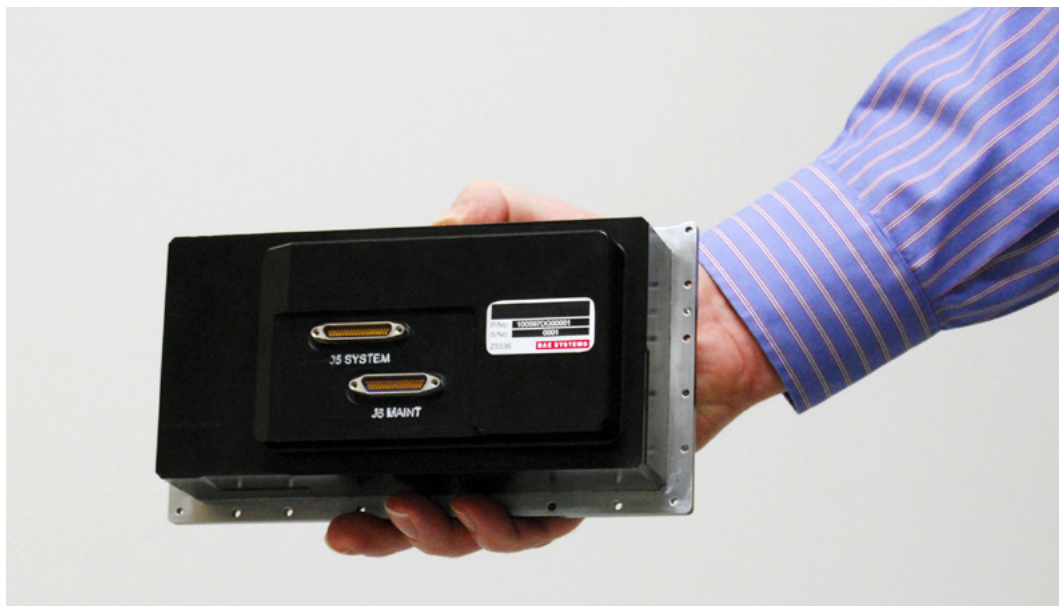
Mantlet packs a big punch

Julian Kerr | Sydney

It’s small but a high achiever, and BAE Systems Australia (BAES) is confident that its locally-developed Mantlet electronic warfare (EW) sensor is not just a world leader in its capabilities but one that will prove ideally suited for multiple air, land and maritime platforms, including submarines.

As described by BAES, Mantlet is “an advanced Miniature Digital Electronic Support Measures System providing Radio Frequency (RF) situational awareness to enable rapid decision-making.”

The system weighs less than 2.5 kg but detects and identifies all modern search, acquisition and tracking radars of maritime, ground-based and airborne weapons systems.



The Mantlet can detect and identify all modern search, acquisition and tracking radars.

BAE SYSTEMS

"It's a full-grown digital receiver starting effectively around the High Frequency range and going all the way up to 18 gigahertz – we don't hide that anymore," David Dunmall, BAES' Principal Technologist for Advanced Sensors and Effectors, told *ADM*.

"It's been developed in the past four years, it's fully digital, and it's probably the most modern and up-to-date EW sensor that's available in its size, weight and power, which is around 100 watts.

"It's really targeted at places where it's difficult to deploy a conventional sensor; they're big and bulky, whereas Mantlet is not only very light but also very small and it can be placed right next to the antennas, avoiding the losses in sensitivity normally associated with long RF cable runs."

"Mantlet means small UAVs now have the ability to deploy a highly-capable EW sensor"

Mantlet means small UAVs now have the ability to deploy a highly-capable EW sensor that is also able to process both communications and radar signals, which is unique for the size of the system.

"The bigger UAVs like Triton and Reaper will be well aware that having a 2.5 kg box with a capability that stands with far bigger and heavier receivers equates to a longer endurance," Dunmall said.

According to Dunmall, international interest has been aroused by the recognition that Mantlet is unique in the marketplace and can be easily integrated onto UAVs, helicopters, fast jets, transport aircraft, land vehicles, and maritime platforms.

"Introduction of Mantlet onto an Australian platform would provide a bespoke sovereign capability."

Because Mantlet detects, identifies and categorises complex emitters and can record data for further analysis, this data could provide the foundation for a true sovereign electronic intelligence system. Users could take control of their own EW databases and threat libraries whilst providing the capability to create and tailor library files for sovereign needs.

Mantlets sold internationally would probably continue to be manufactured in SA.

"The boards are very complex and it would take time for anyone else to come up the production learning curve," Dunmall said.

While the hardware base for the system has been frozen to prevent unnecessary requalification programs, the software is under constant review to take account of new enhancements and intelligence.

MOST READ ONLINE AT WWW.AUSTRALIANDEFENCE.COM.AU



1. [G550 EW aircraft buy clarified for RAAF](#)
2. [ADF's new air defences pass Gate 2 milestone](#)
3. [Is the F-35 obsolete?](#)
4. [The case for an unmanned Australian warship](#)
5. [BAE to test supply chain digitisation on F-35s](#)

Defence approves second Triton purchase

The government has confirmed that it will purchase the next MQ-4C Triton Remotely Piloted Aircraft (RPA).

This aircraft is the second of a planned fleet of at least six Triton aircraft that Australia is acquiring through a \$200 million cooperative program with the US Navy. The novel approach requires RAAF to take on a degree of risk in exchange for a limited ability to tailor the program towards unique Australian requirements.

“The approval of the second aircraft means that the project is on track”

Minister for Defence Christopher Pyne said the Triton acquisition was an important part of strengthening the security of Australia’s maritime borders.

“The Triton – which will complement our manned P-8A Poseidon aircraft – will significantly enhance our anti-submarine warfare and maritime strike capability as well as our ability to monitor and secure Australia’s maritime approaches,” Minister Pyne said.

“These capabilities help us protect our maritime area from threats such as people smuggling, and the exploitation of our natural resources from activities like illegal fishing.

“The Tritons will also be able to undertake enhanced intelligence, surveillance and reconnaissance tasks to support whole-of-government operations.”

At last month’s Avalon Airshow, ADM confirmed with RAAF and Northrop Grumman that the option to commit to a [seventh Triton](#) was still on the cards.

“We’ve committed to six, but we’ll be looking at attrition aircraft,” GPCPT Jason Lind, Director of ISR, EW and Space for RAAF, said.

“In the sustainment phase in particular there will be significant opportunity for



Two MQ-4C Triton unmanned aerial vehicles are seen on the tarmac at a Northrop Grumman test facility. US NAVY/CHAD SLATTERY

Australian industry to share in billions of dollars of system maintenance and network management functions,” Minister for Defence Industry Linda Reynolds said.

“Just last month Northrop Grumman – the manufacturer of the Triton – signed an Australian Industry Capability Deed with Defence, which will result in even more investment and enhanced opportunities for Australian companies.”

The approval of the second aircraft means that the project is on track to see the first Triton aircraft introduced into service in mid-2023, with all six planned to be delivered by late 2025, based at RAAF Base Edinburgh.

Electronic warfare satellite project moves forward

Work on the initial research of the Miniaturised Orbital Electronic Sensor System (MOESS) project has commenced.

The research aims to develop a proof of concept of a reprogrammable, multipurpose electronic warfare sensor system for integration and deployment on small satellites.

MOESS is led by DEWC Systems in collaboration with the University of Adelaide, the University of SA, Flinders University and Defence Science and Technology (DST) Group. DEWC Systems held the contract signing event for the project last month. The proof of concept is set to be completed by mid-2019, allowing for immediate progress to the next stage of development.

Director of DEWC Systems Ian Spencer said he is delighted to win support to develop the technology locally.

“We’re proud to be collaborating with Defence and academia to develop Australian defence capabilities in space while helping to grow Australian Defence



The DEWC team and research partners from the University of Adelaide and Flinders University.

DEWC

“The research aims to develop... an electronic warfare sensor system for deployment on small satellites”

industry,” Spencer said.

“Collaboration is one of DEWC System’s core corporate values because we understand that by bringing the best ideas and skills together, we can make huge strides.”

“Utilising the combined depth of knowledge and skills of DEWC, academia, and DST Group, the MOESS project will work to ensure the ADF maintains capability superiority through this technologically advanced innovation project,” Managing Director of DEWC Allan Dundas said.

“It is an exciting collaborative venture and we look forward to working with a highly skilled team to deliver innovative outcomes for Defence.”

According to UniSA Vice Chancellor Professor David Lloyd, university collaboration with industry is at the heart of what will build an enterprise culture in SA.

“This kind of collaboration – a project that is solutions-focussed and connects the state’s academic expertise with an entrepreneurial company like DEWC Systems, to develop leading edge technologies for the defence sector – is a model for lifting economic development in the state and shows what can be achieved when our institutions work together on grand challenges,” Professor Lloyd said.

“This project is particularly exciting in that it brings together not only academia and industry to work collaboratively on cutting edge technology, but it combines key research priorities for Defence and promises to pave the way for new space sensing capabilities,” Professor Michael Webb, Director for Defence and Security at the University of Adelaide, added.

TOP COMMENTS

Keel constructed for first OPV

Pyne’s press release comes into the category of downright curious. It is likely that they have not yet constructed enough steel work to do a formal keel laying, which normally requires two or more blocks to be placed on the building berth. It is likely that will not happen until after the election. 50 tonnes of steelwork since November is no big deal. Once the frigate program starts rolling, Adelaide will have to produce 50 tonnes, painted and pre-outfitted, every two weeks. Once the submarine build is added that will increase to around 75 tonnes. –**Johnno**



Former Minister for Defence Industry Steve Ciobo with the RAAF, DST and Defence Innovations NIFTI team after winning the Avalon 2019 National Innovation Award. DEFENCE INNOVATIONS PTY LIMITED

NIFTI wins RAAF contract and Avalon 2019 Innovation Award

ADM Staff Writers

The wireless [Non-Intrusive Flight Test Instrumentation system](#), or NIFTI, developed by Melbourne SME Defence Innovations, won the prestigious Avalon 2019 National Innovation Award at last month's [Avalon Airshow](#).

Then-Minister for Defence Industry Steve Ciobo presented the award to the company's chairman and project lead Warren Canning.

The NIFTI system was handed over to the RAAF formally during DST's Scindicate 2018 event in Melbourne last year. It uses self-adhesive, self-powered sensors that can be applied to any part of an airframe. These communicate wirelessly to a battery powered Data Acquisition Gateway mounted elsewhere in the aircraft.

RAAF is the launch customer for NIFTI and developed the requirement in partnership with DST Group.

NIFTI passed a critical milestone earlier this year with a supersonic flight trial of the system aboard an F/A-18 Hornet at RAAF Williamtown. The aircraft was fitted with stick-on sensors and a Data Acquisition Gateway in a little over four hours; it then completed two successful supersonic test flights. The NIFTI equipment was removed in 45 minutes to allow the aircraft to return to squadron service and fly a normal training mission later that same day.

Defence Innovations and the RAAF are now examining new applications for NIFTI, according to Canning. These include

“The savings could potentially pay for a NIFTI system in one flight test campaign”

incorporating time, space and position information for air combat manoeuvre and air-to-air refuelling trials and training, and precision Inertial Measurement Units for stores release trials.

Control stick position and force measurement, a staple of flight testing, is another area for exploration.

NIFTI was designed to reduce the cost and time required to prepare an aircraft for a flight test campaign, according to Canning.

"This is a real problem for both manufacturers and operators of military and civil aircraft, as well as for the schools that train our future test pilots and flight test engineers," Canning said.

The test pilot or a flight test engineer aboard the aircraft can monitor the flight and completion of specific test points in real time using an iPad Mini. The Data Acquisition Gateway is modular and can be mounted wherever space permits – including inside dummy AIM-120 AMRAAM or Hellfire missiles.

"The ability to conduct complex tests quickly and cheaply changes the costs and therefore the business model"

NIFTI includes a variety of sensor types along with nodes where a test sensor such as a strain gauge has already been installed. The NIFTI sensors can store up to 4 hours of test data for later download if security demands or if the test aircraft is unable to accommodate the Data Acquisition Gateway.

Traditionally, test aircraft are either permanently equipped with flight test instrumentation, meaning they are unavailable for operational service, or aircraft are removed from squadron or civilian service specifically for a test campaign. They would be fitted with internal flight test sensors connected to a data acquisition and power system by a heavy and complex wiring loom. Modifying and then de-modifying the aircraft could take weeks, or longer.

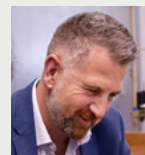
The ability to conduct complex tests quickly and cheaply changes the costs and therefore the business model for flight test and training organisations, Canning said. The savings could potentially pay for a NIFTI system in one flight test campaign.

The potential uses of NIFTI include flight testing of aircraft, helicopters and drones, along with manned and unmanned boats, submarines and vehicles, ranging from main battle tanks to racing cars, he added.

The company is fielding export enquiries but declined to elaborate.

PEOPLE ON THE MOVE

Australian Defence Apparel (ADA) has announced the appointment of Chris Dixon as its new CEO. Dixon has served ADA for eight years, most recently as General Manager of Sales. The chairman of ADA's parent company Logistik Unicorp, Louis Bibeau, said Dixon's leadership qualities combined with his deep industry experience made him the standout choice to lead the business.



Australian AUV dives under Antarctic ice shelf

The University of Tasmania's world-leading polar Autonomous Underwater Vehicle (AUV) and its support crew have returned home after a successful first deployment in Antarctica.

The \$5 million AUV, named *nupiri muka*, is the first untethered [Australian AUV](#) to dive under an ice shelf and joins those from the UK and Sweden as the only AUVs in the world with this capability. The name means 'Eye of the Sea' in the Tasmanian Aboriginal language Palawi Kani.

Funded by the Australian Research Council (ARC) through the Antarctic Gateway Partnership, *nupiri muka* was successfully deployed under the Sørsdal Glacier ice shelf during the summer Antarctic season with support from the Australian Antarctic Program.

"Nupiri muka joins those from the UK and Sweden as the only AUVs in the world with this capability"

Peter King from the University's Australian Maritime College, who led a support team of engineers and scientists, said the successful first deployment under the ice opened the way for more ambitious polar research projects under ice shelves and sea ice in the future.

"This summer's deployment under the Sørsdal Glacier means Australia has joined a very select list of countries with an AUV that's capable of independently exploring under the polar ice," he said.

"The way in which ice shelves melt has a lot to do with what is happening underneath and how ocean circulation and water properties (temperature, salinity) interact with the ice.

"The only way to research certain processes on a relevant scale is with an AUV,



The *nupiri muka* near the Sørsdal Glacier, Antarctica.

AUSTRALIAN ANTARCTIC DIVISION

where we can collect large amounts of data across extensive areas.

"*nupiri muka* allows us to study variables such as water temperature, salinity and current as well as the profile of both the seabed and the underside of the ice, while at the same time collecting sonar imagery and potentially data on the internal structure of the ice," King said.

The Director of the Antarctic Gateway Partnership, Professor Richard Coleman, congratulated the AUV team on its significant achievements, which included a rare view underneath an ice shelf in the lead-up to a calving event from the Sørsdal Glacier.

"Completing this successful first deployment is a major step forward"

"Completing this successful first deployment is a major step forward and testament to the skill, experience and detailed planning of the support team," Professor Coleman said.

"Activities such as these require a significant investment of both time and money, and deploying equipment in extreme environments such as Antarctica always carries an element of risk.

"However, the potential scientific rewards that *nupiri muka* can deliver are enormous.

"Now that we have shown what the AUV is capable of we look forward to realising its great potential during future research projects."

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Forthcoming Events

ADM EVENTS

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

- [ADM Space Summit](#) – 30 April 2019
- [Women in Defence Awards](#) – 11 July 2019
- [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

The National Police, Defence and Emergency Services Women's Leadership Summit

Date 29 March

Location Hyatt Hotel, Canberra

Website www.wla.edu.au

The National Police, Defence and Emergency Services Leadership Summit is a major annual event for women at all levels to connect, share ideas and build their leadership skills. Created by Australia's leading authority on women's leadership, Women & Leadership Australia, the Summit has been developed in consultation with a broad range of stakeholders across these sectors.

Export Control Training Session

Date 03 April 2019

Location 60 Clarence St, Sydney

Web <https://www.stickytickets.com.au/81012>

Join us for a 1-day face-to-face training course to de-mystify the complex area of Export Control regulations. The course will address an overview of the ITAR, EAR, and DEC; how the ITAR and EAR apply to all areas of your business; advice on employing dual and third country nationals; licensing and permit requirements; and more.

Rapid Force Projection Conference 2019

Date 09 April 2019

Location ADFA, Adams Auditorium

Website <https://www.army.gov.au/our-future/australian-army-research-centre-aarc/rapid-force-projection-conference-2019>

The Rapid Force Projection conference 2019 is an opportunity for Australian Defence Forces, key stakeholders, and academics to discuss strategic issues relevant to force projection. The conference is jointly hosted by the Sea Power Centre – Australia, Australian Army Research Centre and Air Power Development Centre.

Williams Foundation – Seminar: Hi-Intensity Operations and Sustaining Self Reliance

Date 11 April 2019

Location National Gallery of Australia – ACT

Website <http://www.williamsfoundation.org.au/event-3159758>

Since 2013 the Sir Richard Williams Foundation seminars have focused on building an integrated fifth generation force. In doing so they have, among other things, highlighted the challenges of making the strategic shift from counterinsurgency operations in Iraq and Afghanistan to higher tempo and higher intensity operations involving peer competitors. Allies are crucial to the Australian concept of defence; however, the emerging strategic circumstances demand it is vital we reconsider the ways and means of enhancing Australian sovereignty to better contribute to our relationships and ensure a more sophisticated and independent defence of Australian interests. During the 2019 seminars, the Sir Richard Williams Foundation will develop this theme and address more broadly the question of how to look at the evolution of the Australian Defence Force from the perspective of the sovereign lens and setting the conditions for future success.

Defence Synthetic Environment Working Group (SEWG)

Date 15 April

Location QT Hotel – Canberra

Established as a government and industry communication forum; the requirement for the SEWG has evolved into an interactive working group exploring innovative uses of Modelling and Simulation (M&S) and investigate the future for emerging M&S technologies. Additionally, the SEWG represents an opportunity to explore how to integrate the M&S Industry as part of the ninth Fundamental Input to Capability.

ASPI China Masterclass – Canberra

Date 15 Apr 2019

Location Hotel Realm

Website <https://www.aspi.org.au/>

The ASPI China masterclass is a one-day intensive event that will give participants a strategic understanding of how China is seeking to shape the world around it. Participants will learn and debate with specialists on China with deep knowledge of the current security, political and thematic landscapes. The Masterclass will track China's global and regional ambitions, and review the Chinese Communist Party's (CCP) investments in cyber, intelligence, defence, space & social credit. This event will offer a deeper understanding of China, the CCP and its rapidly evolving place in the world and explore the policy implications for Australia and the Indo-Pacific region more broadly.

ASPI China Masterclass – Melbourne

Date 17 April 2019

Location Melbourne

Website <https://www.aspi.org.au/>

The ASPI China masterclass is a one-day intensive event that will give participants a strategic understanding of how China is seeking to shape the world around it. Participants will learn and debate with specialists on China with deep knowledge of the current security, political and thematic landscapes. The Masterclass will track China's global and regional ambitions, and review the Chinese Communist Party's (CCP) investments in cyber, intelligence, defence, space & social credit. This event will offer a deeper understanding of China, the CCP and its rapidly evolving place in the world and explore the policy implications for Australia and the Indo-Pacific region more broadly.

BMT's Introduction to Fleet Life Cycle Management (Perth)

Date 01-05 May 2019

Location Perth

Website <https://www.bmt.org/training/introduction-to-fleet-life-cycle-management-course>

BMT's, five-day Introduction to Fleet Life Cycle Management course covers all aspects of naval life cycle management. The modules provide detailed insight into Asset Management and its applications to naval ships and support systems in Defence's maritime environment.

IMDEX Asia 2019

Date 14-16 May

Location Changi Exhibition Centre, Singapore

Website indexasia.com

Coming to its 12th edition, the biennial IMDEX Asia is Asia Pacific's premier international maritime defence show and a must-attend event in the global naval and maritime security calendar. With established conferences and real-time discussions on maritime security, IMDEX Asia draws a plethora of global leaders and distinguished guests.

AusCERT Conference 2019

Date 28-31 May

Location Surfers Paradise Marriott, Gold Coast Australia

Website <https://conference.auscert.org.au>

The AusCERT Conference is the oldest information security conference in Australia. Each year, we attract in the vicinity of 700 participants and approximately 50 sponsors. This year's conference is focused on gaining as many tools for you and your team's toolbox as possible to ensure you are armed and ready for any battle you may face.

Paris Air Show

Date 17-23 June 2019

Location Le Bourget

Website <https://www.siae.fr/en/>

The 53rd Paris Air Show will once again bring together all the players in this global industry around the latest technological innovations. The first four days of the Show will be reserved for trade visitors, followed by three days open to the general public.

Defence Maritime Environment Working Group

Date 24 July 2019

Location National Gallery of Australia, Parkes, Canberra

Website <https://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.

PGCS 2019

Date 20 – 22 August 2019

Location The Canberra Rex Hotel, Canberra

Website <https://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.

Australasian Simulation Congress

Date 2 – 5 September 2019

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.

Australian Cyber Conference 2019

Date 7-9 October 2019

Location Melbourne Convention and Exhibition Centre

Website <https://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

Date 8-10 October 2019

Location Sydney Convention Centre

Website <http://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.

MilCIS 2019

Date 12-14 November 2019

Location Canberra Convention Centre

Website <http://www.milcis.com.au/>

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.

Land Forces 2020

Date 1-3 September 2020

Location Brisbane Convention Centre

Website <http://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.