

ADM DEFENCE WEEK PREMIUM EDITION

AUSTRALIAN DEFENCE MAGAZINE
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The Northern Australia Defence Summit saw high profile speakers discuss challenges facing the ADF in the north. DEFENCE

Northern Australia Defence Summit: Strategic challenges and Indigenous engagement

Ewen Levick | Darwin

ADM's 6th annual Northern Australia Defence Summit saw strategic leaders, industry, and government officials convene in Darwin this week to discuss Indigenous engagement and strategic issues facing Australia in the region.

NT Chief Minister Michael Gunner opened proceedings with a discussion of the wealth of natural resources in the Territory, the state's regional ties, and its importance to Australia's strategic posture.

"You only need to look at a map to see how the north matters," Minister Gunner said. "We aren't near Asia. We're in Asia."

Brigadier Mark Brewer, Director General US Force Posture Initiative, highlighted the growth of the US

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force presence in the Territory, which is approaching the capabilities of a Marine Expeditionary Unit.

BRIG Brewer also asked whether the ADF needs to invest more in its training facilities.

"Are our training areas fit for purpose?" BRIG Brewer asked. "I think we need to ask ourselves whether our traditional approach of heading out into the bush and training on areas with a few containers stacked on each other, which we call an urban facility, are now fit for purpose."

Professor John Blaxland, head of the Strategic and Defence Studies Centre at ANU, gave a thorough SWOT analysis for Australia. Strengths included economic stability; weaknesses included strategic complacency; opportunities involved relationships with SE Asia and South Pacific states with large economic zones; and threats stemmed from the presence of Daesh in SE Asia, interstate competition in northeast Asia, and the Rohingya crisis, which Professor Blaxland expects to hit Australia in the next 12 to 18 months.

Dr Malcolm Davis from ASPI observed that the US is demonstrating a willingness to "push back hard" against China in the South China Sea and elsewhere. This makes the possibility for conflict "very real", particularly given language emerging from the Trump administration labelling China as the 'evil empire'.

Dr Davis also argued that the ADF should think hard about the survivability of surface naval assets, particularly the LHDs, in a high-intensity conflict.

Colonel John Papalitsas, commander of the Regional Force Surveillance Group (RFSG), opened his speech with a video featuring Indigenous NORFORCE soldiers.

"Walking through the bush, for me, is like walking through a library," a soldier said. "It's a book, and I can read it to you."

RFSG are now carrying Indigenous weapons of war in ceremonial procedures, a historical first, to "merge the warrior traditions of Army and Aboriginal nations."

COL Papalitsas also noted that RFSG has conducted continuous operations for



Delegates at the opening of the 6th Northern Australia Defence Summit.

DAVID JONES

“RFSG conducts continuous operations spanning 52 per cent of Australia and five per cent of the world’s total landmass”

over 30 years, spanning 52 per cent of Australia and five per cent of the world’s total landmass. The force has particular strengths in cultural engagement, with some soldiers speaking as many as 17 languages and regularly acting as interpreters on operations.

In addition, RFSG recruitment teams engaging in remote communities in Queensland have increased employment and education rates, whilst simultaneously decreasing rates of domestic violence and nuisance incidents requiring the involvement of Queensland Police.

Following COL Papalitsas, Minister for Defence Industry Steve Ciobo said that the Commonwealth is seeking to create more stable funding for Defence, raising the possibility of detaching the budget from the two per cent GDP floating benchmark currently in use.

Minister Ciobo also spoke of improving relations with Indonesia. “This relationship with Indonesia has been severely underdone. It’s underweight in terms of trade, severely underweight in terms of investment.”

He described the recent free trade agreement as “sub-par” in comparison to other Australian free trade agreements, but recognised it as a “game-changer” for bilateral relations and a “big opportunity” for people-to-people relationships.

Other speakers, including former Defence Chief ACM Sir Angus Houston, AVM (Ret’d) Margaret Staib, and Defence Export Advocate David Johnston also touched on the conference’s core themes: strategic challenges, Indigenous engagement, and working with industry to develop the Defence sector in the Territory.

More information on the Northern Australia Defence Summit 2018 will be available in the December/January edition of *ADM*.

Future Submarine negotiations aim to break deadlock over SPA

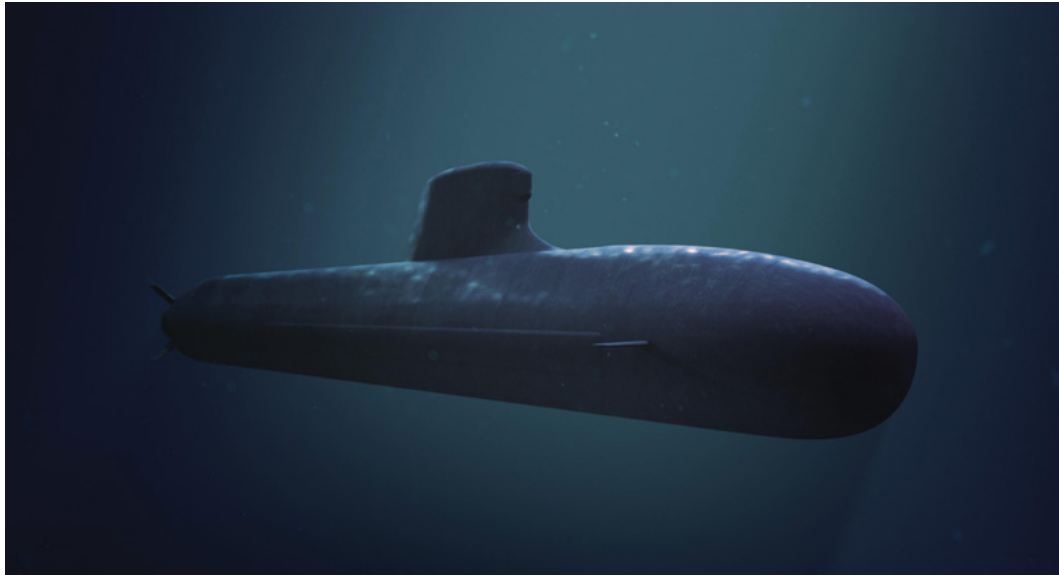
Julian Kerr | Sydney

According to a [report](#) released this week, negotiations have resumed between Defence and Naval Group regarding [the impasse](#) over a strategic partnering agreement (SPA) for Sea 1000.

The SPA outlines conditions that will last for the life of the program. Negotiations were supposed to conclude in 2017, but the report quotes sources as saying that this timeframe was unrealistic. The SPA schedule has reportedly been amended several times.

“This is a long complex program, and until final design issues are settled with the Commonwealth, we need to build the right foundation,” French Ministry for Foreign Affairs special representative for Australia Ross McInnes [explained to ADM](#) last week.

“The Commonwealth will have to judge what priorities they want in terms of industry content.”



The overarching SPA will set out terms and conditions that will endure for the entire Sea 1000 program.

NAVAL GROUP

“Discussions between the two ministers are expected to drive movement over the next two weeks on major dispute issues”

Negotiations are headed by Jean Michel Billig, Naval Group’s executive director for the Australian submarine program, and Rear Admiral Greg Sammut, head of the Future Submarine Program in CASG.

The talks follow a visit to Australia by French armed forces minister Florence Parly, who met with Minister for Defence Christopher Pyne.

“Discussions are expected to drive movement over the next two weeks on major dispute issues that the Australian side is reportedly taking a tough line. These include the length of warranty periods to cover potential defects and the implications on high-level co-operation and technology transfer in the event of a merger between

Naval Group and Italy’s Fincantieri,” the report said.

“Agreement on the principles will require several weeks of drafting and Australian government approvals that are unlikely to be received before January at the earliest, followed by Naval Group undertaking its own approvals procedure.”

The report notes that RADM Sammut has been “authorised by government to utilise an underspend in the now-expired design and mobilisation contact”. This underspend will allow work to continue for only a few weeks.

ADM understands Naval Group Australia has an unofficial hiring freeze until such time as the contract is signed for the next phase of the decades-long program.

PEOPLE ON THE MOVE

The Board of Directors of Airbus has selected Guillaume Faury as future Airbus CEO. In May 2013, Faury returned to Airbus from Peugeot as CEO of Airbus Helicopters and in early 2018 he took the helm of Airbus Commercial Aircraft. “We have diligently prepared for this succession, reaching a unanimous conclusion after a thorough examination of all potential candidates, internal and external. We are delighted to be appointing someone of Guillaume’s calibre to take the helm,” Denis Ranque, Chairman of the Board of Directors of Airbus, said.



US Defence Industrial Base Report a template for Australia

Kate Louis | Ai Group

The US Department of Defense has released a [report](#) entitled ‘Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency of the US’.

“The methodology by which the US has completed this assessment could be a broad guide for Australia in future”

The report is a whole-of-government effort to identify and assess risks in the US manufacturing and defence industrial base, and informs recommendations made by Defense Secretary James Mattis to the White House to ensure a “robust, resilient, secure, and ready” manufacturing and defence industrial base.

The report demonstrates the importance the US places on the strength and resilience of its defence industrial base as a critical element of the country’s national security and economic prosperity.

It is an international exemplar from which Australia may be able to draw relevant advice and assessment of the implications for our own industrial base. While the US is much larger in scale, the methodology by which the US has completed this assessment could be a broad guide for Australia in future, and for development of the implementation plans associated with our [Defence Industrial Capability Plan](#) released earlier this year.

There are a range of key findings which should be of interest to Australia, including where the report notes that:



The continued impetus the report will give is important for Australia’s Defence industrial relationship with the US.

DEFENCE

- Macro forces have led to impacts primarily in the sub-tiers of the defence supply chain, including such issues as the uncertainty about future budgets, and the decline of US manufacturing capability and capacity;
- The level of foreign dependence on competitor nations; and
- Workforce challenges which face employers across all sectors.

From an Australian point of view, it is particularly pleasing to see the following proposal embedded in the recommendations: 'Working with allies and partners on joint industrial base challenges through the National Technology Industrial Base and similar structures.' This follows on from recent US legislation which expanded the definition of the National Technology and Industrial Base to include the UK and Australia.

While the specifics of what this means are still being fleshed out, the continued impetus the report will give to this legislative initiative will be important for our defence industrial relationship with the US in the future, including potentially increased access to innovation and interoperability.

Note: Kate Louis is the head of Defence and Industry policy at [Ai Group](#).

New coating halves rate of biofouling on RAN ships

A new corrosion-resistant coating that halved the build-up of algae and barnacles on ship hydraulic components is now being trialled on HMAS Canberra.

Researchers from Swinburne University of Technology are collaborating with experts from the Defence Materials Technology Centre, MacTaggart Scott Australia, United Surface Technologies and DST Group to advance the new technology.



Biofouling increases drag and fuel costs for RAN ships.

DEFENCE

The scientists and industry experts came together to tackle the issue of corrosion and [biofouling](#), where tiny marine plants and animals build up on the surface of things that are constantly in the water, such as ship hulls, anchors and piers.

This build-up can be costly: it can transport pest species to new areas, cause corrosion, damage critical mechanical components and increase the drag on a

ship, causing it to burn more fuel as it sails. These combine to impose a large expense on the shipping industry worldwide.

"Many scientists around the world are looking for new ways to combat biofouling and corrosion," Dr Andrew Ang of Swinburne, one of the lead scientists on the team, said.

"We have developed new materials and used a supersonic combustion flame jet, i.e. a 'flame thrower', to coat hydraulic machinery parts, and found these new protective coatings reduce biofouling by roughly 50 per cent compared to current standard coatings."

The researchers are trialling the treatment (a single layer of carbide-based coating) on parts that require very smooth surfaces. As these are exposed to harsh operating conditions, they rapidly degrade from biofouling and corrosion.

The treatment is likely to be too expensive to be used on entire ship hulls, but may make a significant difference for critically important machinery on a ship that helps provide propulsion or heavy lifting capabilities.

The team tested the protective coating on more than 100 test samples, immersing them in seawater at three field sites around Australia from 2015 to 2017.

According to Dr Richard Piola from DST Group, the new surface coatings could make a significant difference to the operational availability of Navy ships, and significantly reduce the cost of maintenance and repairs.

"If the coating can double the length of time a ship can be at sea or available to be deployed—before it needs to be docked and cleaned—it could save costs and also increase operational readiness for the ADF."

The team is now testing the protective coating on a prototype system in the field, and have been invited to conduct the trial on HMAS *Canberra*.

"These new protective coatings reduce biofouling by roughly 50 per cent compared to current standard coatings"

MOST READ ONLINE AT WWW.AUSTRALIANDEFENCE.COM.AU



1. [First Japanese lithium-ion equipped sub launched](#)
2. [US Hornets poised for Australian repairs](#)
3. [Defence signs first contract for Future Frigate](#)
4. [Boeing signs new partnership with CASG on Chinooks](#)
5. [Airbus asked to perform de-risking studies on Tiger](#)

Future Defence opportunities require agile procurement methods: KPMG

A [report](#) by KPMG has highlighted the issues surrounding lengthy procurement processes in an era of rapidly-iterating technologies.

The report's authors – Mike Stone, Suzanne Nickerson, Andrew Spong, and Jonathon Gill – argue that “information technologies such as networking hardware and software are likely to last less than a decade, meaning that in a lengthy procurement process they can be out of date before the ‘heavy metal’ even goes into service.”

According to Stone, “some advanced agencies tackle this by postponing the choice of such hardware and software until the “last responsible moment,” by budgeting for it early on, defining its size, weight and power but agreeing its technical specifications as late as possible.”

There are efforts to address the issue. The report points to the DPCP's efforts to explore [collaborative contracting](#), a model used in sustainment efforts for the Adelaide-class frigates. The authors cite positive results including a 44 per cent decrease in hourly labour costs, a 38 per cent decrease in defects and the on-time delivery of all work.

Other options for agile procurement methods include cloud-based systems. The report notes that “some US states have moved to digital cloud-based procurement systems, which allow them to track and analyse spending, helping them to consolidate contracts – one state found 96 contracts for the same service – and negotiate volume discounts.”

Additionally, the rise of 3D printing allows for the sale of digital files rather than physical items, with particular implications for military remote or at-sea sustainment.

“The most important is to shift defence procurement officials from trying to predict the future to making use of agile methods of buying”



Attendees at The Defence Innovation Hub annual industry update.

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The report highlights a number of initiatives brought in globally to attract small, agile suppliers in procurement processes. "These include the Other Transaction Authority (OTA) process and the Defense Innovation Unit Experimental organization (DIUx), both in the US; Australia's Defence Innovation Hub and Next Generation Technologies Fund; and Canada's recently-launched Innovation for Defence Excellence and Security (Ideas) program."

However, according to Mike Stone, military agencies still prefer to deal with big organizations, finding ways around the targets. "It often just means that a larger provider teams up with a bunch of smaller ones, and then subsequently acquires them," Stone said. "They want the stability of the larger provider and some of the innovation that comes from the smaller ones."

The report concludes by calling for a change in thought processes in Defence procurement.

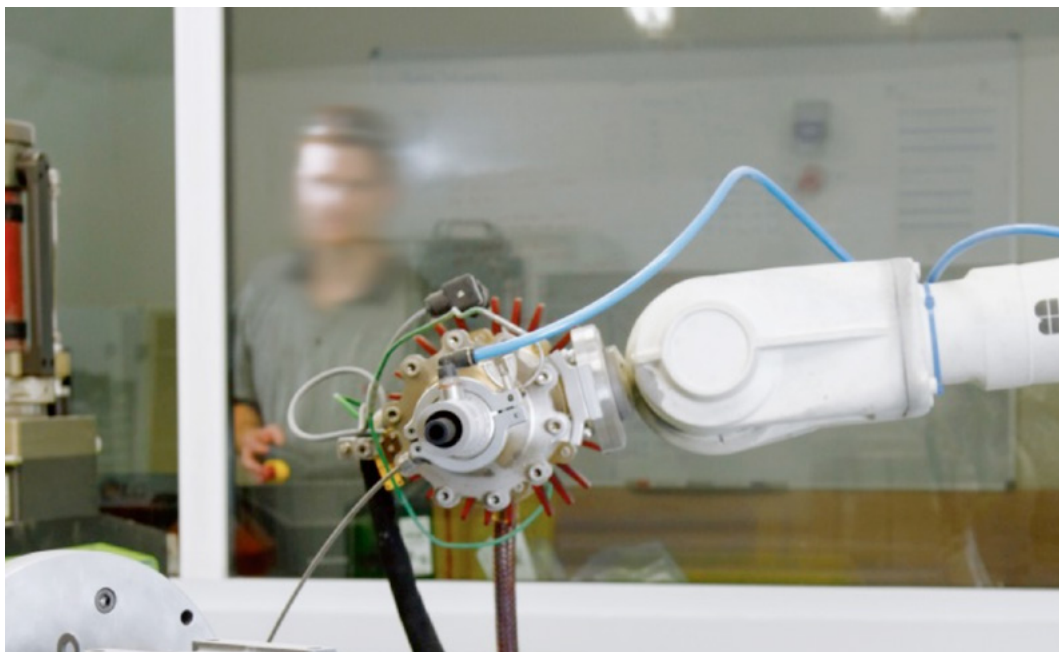
"The most important is to shift defence procurement officials from trying to predict the future to making use of agile methods of buying that allow them to take advantage of what the future brings."

RUAG Australia receives first order for mobile supersonic tech

RUAG Australia has signed a contract with US company VRC Metal Systems to deliver a mobile Supersonic Particle Deposition (SPD) Unit for US Navy trials in 2019.

The mobile unit is based on [RUAG Australia's](#) Field Portable SPD Unit and will be used by the US Navy to deliver additive metal repairs on site.

According to RUAG, SPD is a technology in which metal powder particles



SPD technology accelerates metal powder particles to supersonic speeds in order to cause plastic deformation and bonding. RUAG

“This technology, also known as ‘cold spray’, allows for cost and time optimized repair of structural components on aircraft”

are accelerated to supersonic speeds in a high pressure expanded gas flow and impact a solid surface with sufficient energy to cause plastic deformation and bonding with the underlying material. This technology, also known as ‘cold spray’, allows for cost and time optimized repair of structural components on aircraft.

RUAG Australia has been working with US Defence sponsored partners to evaluate and assess the feasibility of enhancing the performance of the mobile SPD unit since 2015 under US collaborative programs.

Together with VRC Metals Systems, RUAG analysed the supportability of incorporating elements of the US developed VRC Raptor cold spray system. The analysis of the mobile system was viable and demonstrated performance equal to the larger fixed cold spray system.

Neil Matthews, senior manager Research and Technology, RUAG Australia, and Professor Rhys Jones, of Monash University [won the ‘Best Written Paper’](#) Award in Additive Manufacturing at the Avalon Airshow in 2017 for proving that SPD repairs successfully restore both the lost structural integrity and the load carrying capacity of aircraft wing panels.

As a result of this finding, VRC Metal Systems entered into a partnership with RUAG to deliver a mobile SPD unit into US Navy field trials.

RUAG Australia will also provide the operational and maintenance manuals as well as one month’s training to VRC Metal Systems employees in Rapid City, South Dakota.

In a statement, RUAG Australia said it intends to continue to work with VRC Metal Systems to support the transfer of shared technology between parties as SPD/cold spray applications continue to expand.

EPE trials maritime improvised explosive detector in Darwin

The RAN and EPE have conducted a test at HMAS Coonawarra to showcase the performance and functionality of a Maritime Portable Raman Improvised Explosive Detector (PRIED) prototype.

The maritime PRIED prototype’s objective is to provide increased awareness and protection through a ‘stand-off’ detection capability. This detection is for explosives, chemical warfare agents, narcotics and gases.

According to EPE, the PRIED was initially designed for employment in the land domain and was not built to account for salt water ingress. The maritime PRIED project intends to deliver a prototype that has been optimised for maritime operations, with the aim of providing enhanced protection to

“The maritime PRIED prototype’s objective is to provide increased awareness and protection through a ‘stand-off’ detection capability”



The maritime PRIED project intends to deliver a prototype that has been optimised for maritime operations.

EPE

RAN boarding parties.

"This innovation has the potential to deliver a new paradigm in boarding operations enabling stand-off detection prior to boarding," EPE director Warwick Penrose said following the initial Defence Innovation Hub grant award.

EPE signed a [\\$1 million contract](#) with the Hub in February to further develop the baseline PRIED system to enable its deployment in the maritime environment.

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Forthcoming Events

ADM EVENTS

More detail on **ADM** Events can be found on our dedicated website: admevents.com.au

- [ADM Congress 2019](#) – 13 February 2019

BMT's Whole Life Warship Capability Management course

Date: 22-26 October 2018

Location: Adelaide

Website: <http://www.bmtdesigntechnology.com.au/training-courses/whole-life-warship-capability-management/>

BMT's Whole Life Warship Capability Management course is run over five days and is accredited by the Royal Institution of Naval Architects. The course covers: warship concept development and design management; regulation, seaworthiness and safety systems; platform systems and fundamentals of naval architecture; above and below water battlespace systems; production, sustainment and cost engineering.

WA Indo-Pacific Defence Conference 2018

Date 30 October 2018

Location Crown Towers – Perth, WA

Website <http://perthusasia.edu.au/defence-forum-2018>

The 2018 Western Australian Indo-Pacific Defence Conference will convene strategic thinkers from the military, industry, academic and government in Perth, home to Australia's largest naval base, a growing defence industry, and a vibrant civic and academic community. This conference will promote the State's defence capability to national and international defence stakeholders. The aim is to provide new and relevant information from high-level speakers to educate and inspire our local industry, and to assist them in becoming world class and globally competitive (export ready).

NZDIA 2018 Forum

Date 30 October – 1 November 2018

Location Central Energy Trust Arena, Palmerston North (NZ)

Website <http://www.nzdiaforum.co.nz/page/528148>

The 2018 NZDIA Forum is our 21st forum. We aim to bring together industry (local, regional and international) and a wider range of government interests than has been achieved previously. The NZDIA forum has, for 20 years, been the most important event on NZ soil for defence and industry to come together. This year we are creating the opportunity and space for a wider cross section of industry: local, Australasian and global with a broader interest in national security encompassing defence, to come together. The speaking and workshop program is coming together as we identify how best to deliver excellent value to our traditional constituency and new attendees.

Veterans Film Festival

Date 1 November – 3 November

Location Palace Electric Theatre, ADFA, Canberra

Website www.veteransfilmfestival.com

The RSL National Veterans Film Festival (VFF) is an annual event, putting the spotlight on stories about veterans, first responders, their families and the influence of warfare on our society. The festival presents a curated program of carefully selected feature films, short films and media art from Australia and around the globe. Our focus is on recent work by talented indie filmmakers. However, within our program we also present mainstream films, retrospectives and provide opportunities to meet with filmmakers and content creators via Q&A's, panels, etc. All films submitted to the official competition will be eligible to compete for the coveted Red Poppy Awards.

SIA Biennial Conference

Date 7-8 November 2018

Location Rex Hotel, Canberra

Website www.submarineinstitute.com/sia-conferences

Join submarine professionals and key decision makers as the ninth in the biennial series of conferences run by the Submarine Institute of Australia returns to Canberra to explore the issues and opportunities emerging from the decision to extend the lives of the Collins class submarines.

ACA Corrosion & Prevention 2018

Date 11-14 November 2018

Location Adelaide Convention Centre

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

As always, the focus of the ACA's annual conference and trade exhibition will be the safe and effective management of the continuing challenge posed by corrosion. More than 400 delegates are expected to attend the conference and extensive exhibition supported of key industry suppliers. Industry experts will deliver five plenary presentations—including the F P Thompson Lecture, which will be delivered by Professor Brian Kinsella, Curtin University, Australia.

MilCIS 2018

Date 13-15 November 2018

Location National Conference Centre, Canberra

Website 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.

Australian Warrior Expo

Date: 15-17 November 2018

Location: Brisbane Showgrounds, Exhibition Building

Website: www.australianwarriorexpo.com.au

The Australian Warrior Expo (AWE) is Australia's premier Law Enforcement, Military, Emergency Services and Security Expo and is the only event of its type in Australia. AWE is dedicated to showcasing the latest products, technology, equipment and services to this niche market. AWE will bring both professionals and agencies together including Government Procurement Managers, Decision Makers and Operators.

Avalon Airshow 2019

Date: 26 February - 3 March 2019

Location: Avalon Airport

Website: <https://www.airshow.com.au/airshow2019/index.asp>

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.

TEAM DEFENCE AUSTRALIA EVENTS

- **Euronaval 2018** – 23-26 October 2018, Paris, France
- **Indo Defence 2018** – 7-10 November 2018, Jakarta, Indonesia

For more information go to the business.gov.au TDA webpage [here](#). TDA EOIs will open a few months prior to the event – to keep up to date [register](#) for the CDIC newsletter.