

ADM DEFENCE WEEK PREMIUM EDITION

AUSTRALIAN DEFENCE MAGAZINE
SERVING THE BUSINESS OF DEFENCE



If the Loyal Wingman is what it appears to be, why place a pilot in danger at all?

BOEING

Is the F-35 obsolete?

Ewen Levick | Sydney

The unveiling of Boeing and RAAF's experimental unmanned fighter, the Air Power Teaming System (or the less clunky 'Loyal Wingman'), [stole the show](#) at Avalon last week.

The aircraft, developed under Minor Program 6014 Phase 1, is a semi-autonomous air vehicle designed to fight alongside fast jets like the F-35 or F-18. It is capable of carrying weapons, sensors, and possibly EW capabilities. The purpose of the Loyal Wingman is to 'act as an extension' of manned platforms, act as a force multiplier, and potentially undertake the riskier missions in a high-end fight. It is controlled from either a manned aircraft or ground stations.

Exact performance details are classified, but according to Boeing, the Wingman can "keep up with the aircraft it is designed to protect" – suggesting it can match the F-35 for speed, manoeuvrability, signature, and perhaps range (the unclassified range is around 2,000 nautical miles).

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Investment figures show that the platform clearly has capability and performance potential: Defence has stumped up \$40 million to procure three Wingmen, an unusually large sum for an experimental platform, and the project is the largest investment Boeing has ever made in an unmanned system outside the US. When asked for exact numbers, a Boeing spokesperson simply said, "Look, we're Boeing. It's a lot of money."

The Wingman, however, raises significant questions about the platform it is designed to protect. It can be flown without an accompanying F-35, although neither RAAF nor Boeing "envision it being used that way". Why not? If this

new unmanned 'fighter-like' aircraft with 'plug and play' payloads is designed to match the performance and capabilities of an F-35, and can be flown without one nearby, why send an F-35 and a pilot into harm's way at all? Has the Loyal Wingman made the F-35 obsolete?

These may come as deeply unattractive questions. After all, the F-35 is the world's most expensive military project. Australia's first two F-35s only landed in-country three months ago, and another 70 aircraft, worth somewhere in the realm of US\$90 million each, are on the way. Yet *ADM* understands that the Loyal Wingman could be undertaking test flights as early as next year, before RAAF's F-35s achieve IOC. A lot of money is going into an aircraft whose replacement may have already been unveiled.

So let's assume that the Loyal Wingman has not made the F-35 obsolete, as Minister for Defence Christopher Pyne asserted when *ADM* asked the question. That gives us a new question – where is the point of difference?

If the Wingman truly can 'keep up with an F-35', then the point of difference must be on-board capabilities rather than flight performance. The air vehicle is far more than glorified ordnance carrier; the project team has taken a modular 'plug and play' approach, allowing for quick payload reconfigurations for different missions. This means the point of difference is unlikely to be the on-board capabilities themselves, but rather the number of capabilities the Wingman is capable of carrying in comparison to an F-35 on any given mission.

That conclusion, however, only leads to further questions. Could the combination

"A lot of money is going into an aircraft whose replacement may have already been unveiled"

PEOPLE ON THE MOVE

Leidos Australia CEO Christine Zeitz has announced the appointment of Andrew Mannix as Director Defence Mission Systems. "Andrew has significant experience in managing complex projects and in developing innovative solutions to the evermore challenging problems faced by our Defence force," Zeitz said.

Rob Oliver has retired as CEO of Pilatus Australia. He was farewelled by an acrobatic display of PC-9/A aircraft at the 2019 Avalon Air Show. "I thank Mr Oliver for his dedication and hard work," Minister for Defence Personnel Darren Chester said.

Rod Drury has been appointed as the new chair of the Space Industry Association of Australia. Rod brings significant experience to the role gained from a career spanning 35 years in both the local and global aerospace sector, including 20 years in the RAAF and over 15 years in various governance and leadership roles with multi-national aerospace companies.

of Wingmen and an F-35 could be equalled by alternate, unmanned combinations? If ISR, EW, and weapons capabilities are truly 'plug and play', perhaps other Wingmen with different on-board configurations, or even a Triton, could fill in for the manned jet. The answer to this question is not clear. Yet as long as there is no clear answer, then the first question – whether the Wingman has made the F-35 obsolete – remains valid.

So let's take it a step further and assume that the sum of an F-35 and Wingmen truly is greater than any alternate combination of platforms. If the system is used as intended, the likely scenario will be an F-35 with Wingmen deployed forward and the pilot out of harm's way in the rear. Yet this puts information strain on the pilot, who now has control, either partial or full, over three rather large aircraft, and relegates the F-35 to an over-the-horizon task manager. Why not assign control of the Wingmen to a ground station or any other manned aircraft? The point of difference that necessitates the presence of an accompanying F-35 must now lie between the jet and any other platform capable of acting as a 'system of systems' node and remotely tasking an unmanned air vehicle. Until that point of difference is clear, the question of obsolescence remains open.

An alternate explanation is that the Wingmen are not actually accompanying the F-35, but the F-35 is the one accompanying the Wingmen. US company Department 13 has demonstrated its ability to take over UAS in flight using protocol mimicry. If RAAF fears that the Wingman is vulnerable to being commandeered by an adversary, then perhaps the F-35 is actually there to watch the watchmen. This conclusion is abstract, but even if true, it still does not prove the unique utility of F-35s.

Lastly, there is the observation that the F-35 is needed to fill the capability gap between Super Hornets/Growlers and a truly operational fleet of unmanned fighter aircraft. The Loyal Wingman certainly has a fair way to go before it is deployable, but with a test flight scheduled next year, the process is well advanced. This observation, therefore, at best relegates the F-35 to the role of a short-lived benchwarmer.

So we're back where we started – if the Wingman is what it appears to be, why place the person in the cockpit of an F-35 in danger at all? Where is the point of difference? It may be payload capacity, but as long as that conclusion is unclear then the obsolescence question remains valid. If it truly is payload capacity, then the point of difference must lie between the F-35 and any other networked joint platform with 'system of systems' integration, beyond line-of-sight and remote tasking capabilities – another unclear conclusion that leaves the original question open. Perhaps an F-35 must fly alongside the Wingman to off-set the vulnerability of the semi-autonomous system, but it is not the only solution to that problem. We're left with two possible answers: either the Wingman is not what it appears to be, or the F-35 is a short-lived benchwarmer – not quite obsolete, but close.

The question may be deeply uninviting, but until we know more about what the Wingman can and cannot do, it is worth asking.

Re-thinking the FFG(X) program: Why a new contender must be considered

Duncan MacRae | Melbourne

With [Canada](#) joining the UK and [Australia](#) as the customer base of BAE's Type 26/Global Combat Ship (GCS) and significantly increasing the production run to 32 ships, the exclusion of GCS from the US Navy's FFG(X) contender list warrants serious review.

While originally omitted due to the program's stipulation of a "mature parent design" for contenders, the fact that GCS has now secured significant orders from three of the US' most important allies opens the way to revisit this initial reasoning.

With an intended procurement timeline for the first FFG(X) of FY 2020, there is growing frustration within US Congress at the pace with which the FFG(X) program is proceeding. On the face of it, the inclusion of another contender into the mix at this stage would undoubtedly raise some alarm from a political perspective but the benefits would reward careful and deliberate consideration of this option.

Faced with an ambitious timeline (the FFG(X) program was commenced in 2017), selection of contenders was directed to favour existing designs fitted with current technology. Indeed, a report to Congress on 4 February 2019 reinforces the restriction that FFG(X) must have no new technologies or systems; a bewildering position in light of the rapid pace of change of the US' likely enemies.

Most recently though, while the conceptual design work undertaken by the initial five shipyards has seen some refinement of the initial requirements, the USN has used this time to further consolidate its requirements, and from a quick analysis there is a latent disparity between the two expectations.

Broadly described as a multi-mission platform with capability in all major naval warfare spheres (in contemporary parlance a general purpose frigate), the FFG(X) specifications of increased anti-air (AAW), electromagnetic warfare (EMW) capabilities and enhanced survivability over and above that stipulated for LCS, as



BAE's GCS has now secured significant orders from three of the US' most important allies.

BAE

well as directed weapon and sensor fit-outs (AEGIS commonality, Standard and Evolved Sea Sparrow missiles, Surface Electronic Warfare Improvement Program Block 2 and Cooperative Engagement Capability (CEC)), all point to a platform looking to replicate, albeit on a slightly smaller scale, the high-end and evolving capabilities inherent in the USN's existing fleet of Arleigh Burke DDGs.

Far from looking to operate existing technology and equipment, the USN is rightly looking at the future fight which many see as being just around the corner. Having placed greater weight on this future-proofing to ensure that the USN's future frigate force is actually fit for purpose, the GCS becomes a standout

option. This is so because across the three existing customers, the technology edge that the USN actually seeks (and needs) is already in evidence through the various system/equipment/weapon integrations present in the UK, Australian and Canadian projects.

The selection of BAE's GCS could be greatly enhanced through the prospect of shipyards and logistics chains associated with the UK, Australian and Canadian frigate programs taking on a large part of the US work and therefore risk. This is not to say that the US shipbuilding industry would miss out but rather that the industries of allied partners, who have already accepted risks associated with the platform delivery, would be able to act as a safety net. Production of US naval vessels in foreign shipyards is currently inhibited by law, however, production at least of core components, superstructure modules or associated systems in

allied nation dockyards before forwarding to US shipyards for completion could yield significant benefits in time, cost and access to industry best-practice and technology.

Having established industry involvement through a distributed production line, matters of sustainment through global logistics and maintenance networks would be the next great benefit to selection of GCS. Despite an increased focus on the Asia-Pacific region, the USN is unlikely to withdraw completely from its global footprint.

To be able to access dispersed but connected industry hubs in partnership with trusted allies introduces significant flexibility to sustainment and operational models as well as reducing the risk to these of any interference, degradation or attack. Further benefits of cost and sustainment of industry workforce apply here also and having a greater number of locations providing maintenance options at all levels would positively contribute to the availability and readiness of operational vessels in direct support of an increased operational tempo.

Finally, for the US the purchase of a modern, future-proofed frigate type operated by a number of its key allies would go a great way to facilitate the much sought-after high-end interoperability dictated by modern coalition warfare. Already being borne out by the success of Australia's Hobart-class destroyers as well as air platforms such as the P-8 Poseidon maritime patrol aircraft and MH-60R ASW helicopter, having similar platforms provides force commanders with a warfighting advantage.

Even accepting the differences in some systems or weapons of the individual countries' GCS variants, they remain complimentary overall, synergised as they would be by the similarities in the culture, training and tactical thinking of the ship's crews. The result in a combined environment would be a highly flexible and adaptive force, providing distributed and resilient lethality against a potential enemy.

“Matters of sustainment through global logistics and maintenance networks would be the next great benefit”

Army team takes drone literacy overseas

The use of UAS by defence forces has been growing in pace as the technology improves and adapts at a rapid rate. The [utility of drones](#) is wide-ranging with applications in intelligence, surveillance and reconnaissance.

In a country such as Papua New Guinea (PNG), renowned for its rugged and often inaccessible terrain, the drones are a game-changer, providing effects from beyond line of sight capability to safely and effectively supporting tasks ranging from humanitarian assistance to high-end warfighting.

At the request of the PNG Defence Force (PNGDF), a small mobile training team from 20th Surveillance and Target Acquisition Regiment (20 STA Regt), Major Charles Phillips and Bombardier Paul Fiannaca, travelled to the northern PNG town of Wewak as part of the Australia-PNG Defence Cooperation Program. They trained members of Recon Platoon Second Royal Pacific Island Regiment (2 RPIR) using Commercial-Off-The-Shelf Mavic UAS to become the first qualified operators in the PNGDF.

“Our role was to guide and conduct airworthiness training, initial flight training and we supported the commencement of an operational evaluation,” MAJ Phillips said.

“This will allow CAPT Jonathan Kerenga, PNGDF, and members of the Recon Platoon, 2 RPIR to conduct a comprehensive trial of UAS for the PNGDF over the next 4 months.”

The training was also conducted in several areas of the East Sepik region of PNG and included flight operations at historic locations such as Cape Wom Memorial Park. Larger defence training areas were also utilised to provide PNG soldiers the chance to test the UAS capabilities.

“The bigger training areas gave the PNG soldiers the chance

“The entire platoon gained their basic operator qualification within the first three days”



Bombardier Paul Fiannaca (right) coaches 2 RPIR reconnaissance soldiers in Wewak, PNG.

DEFENCE

to 'stretch their legs' and see the game-changing advantages a UAS can offer. They successfully tested ranges out to 2.5 kilometres," BDR Fiannaca said.

Major Phillips also observed that although the Australian soldiers' ability to speak Tok Pisin was very limited, there was no language barrier that the enthusiasm of the PNG soldiers couldn't overcome and the training was very well received.

"The entire platoon gained their basic operator qualification within the first three days, allowing them to get a significant head start on the tactical employment and operational evaluation of the UAS," Major Phillips said.

"Considering that the majority of the soldiers had never held a UAS before, let alone fly one, this was a significant milestone for the PNGDF," MAJ Phillips added. "It was a real privilege for us to pass on our knowledge and expertise to such a committed group of soldiers."

20 STA Regt hopes that using its expertise as the longest operators of UAS in the Army to build long term relationships will see increased opportunities to enhance PNGDF capabilities.

US Navy declares IOC for F-35C

The US Navy has declared that the aircraft carrier variant of the Joint Strike Fighter, the F-35C Lightning II, has achieved Initial Operational Capability (IOC).

The announcement comes shortly after the Navy's first F-35C squadron, Strike Fighter Squadron (VFA) 147, completed aircraft carrier qualifications aboard USS *Carl Vinson*.

In order to [declare IOC](#), the first operational squadron had to be properly manned, trained and equipped to conduct assigned missions in support of fleet operations. This included having 10 Block 3F F-35C aircraft, requisite spare parts,



Sailors direct an F-35C Lightning II on the flight deck of the aircraft carrier USS *Carl Vinson*.

ETHAN SOTO

support equipment, tools, technical publications, training programs and a functional Autonomic Logistic Information System (ALIS).

Additionally, the ship that supported the first squadron had to possess the proper infrastructure, qualifications and certifications. Lastly, the Joint Program Office, industry, and Naval Aviation demonstrated that all procedures, processes and policies are in place to sustain operations.

"The F-35C is ready for operations, ready for combat and ready to win," Commander Naval Air Forces, Vice Admiral DeWolfe Miller, said. "We are adding an incredible weapon system into the arsenal of our Carrier Strike Groups that significantly enhances the capability of the joint force."

"We're very proud of what our sailors have accomplished in the Joint Strike Fighter community," CAPT Max McCoy, commodore of the US Navy's Joint Strike Fighter Wing, said. "Their commitment to mission delivered fifth generation capability to the carrier air wing, making us more combat effective than ever before."

"We will continue to learn and improve ways to maintain and sustain F-35C as we prepare for first deployment."

"The F-35C will revolutionize capability and operating concepts of aircraft carrier-based naval aviation using advanced technologies to find, fix and assess threats and, if necessary, track, target and engage them in all contested environments," Rear Admiral Dale Horan, director of the USN F-35C Fleet Integration Office said. "Our focus has now shifted to applying lessons learned from this process to future squadron transitions, and preparing VFA-147 for their first overseas deployment."

The F-35C is the final American Joint Strike Fighter variant to declare IOC and follows the USAF's F-35A and USMC's F-35B.

"Our focus has now shifted to applying lessons learned from this process to future squadron transitions"

MOST READ ONLINE AT WWW.AUSTRALIANDEFENCE.COM.AU



1. [Avalon Airshow ministerial announcements in overdrive](#)
2. [Space Agency formalises relationship with Lockheed Martin](#)
3. [Avalon 2019 kicks off](#)
4. [Bisalloy progresses on Boxer steel](#)
5. [Seventh Triton still on the table](#)



RAAF F/A-18A Hornet aircraft await their next missions on the flight line at Nellis Air Force Base, Nevada.

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Hornet repaired using laser additive deposition

Defence and RUAG Australia have completed a program to develop and demonstrate [Laser Additive Deposition \(LAD\)](#) as a technology for repairing damaged high strength steel components.

The technique was used for the full repair and return to service of an arrester hook from a RAAF F/A-18 Hornet, which had previously identified as worn 'beyond safe limits' due to operational activities. The full repair significantly improved the component's return-to-service time compared with the typical replacement options.

LAD is an Additive Material Technology (AMT) which rebuilds damaged metal surfaces. A high power laser beam creates a melt pool in the surface. Metal particles are injected into the melt pool, and fuse with the surface as the surface cools and solidifies. Overlapping passes build a 3D deposition structure which can then be machined to the required shape. LAD is applicable to the repair of high strength metal components and structures.

Defence has invested substantially into developing in-country LAD repair capability.

"Additive Material Technologies such as LAD are now critical to sustaining Defence's equipment in the air, land and sea environments," Neil Matthews, Senior Manager for Advanced Technologies and Engineering Services, RUAG Australia, said.

"The long-term cost reductions are significant as the reliable

"The long-term cost reductions are significant as the reliable repair of components lowers the overhead"

repair of components lowers the overhead attributed to logistics and inventory.”

“To date, Defence and RUAG have recovered more than six million dollars of Defence equipment using additive material technologies,” Khan Sharp, Research Leader for Aerospace Materials Technologies, DSTG, said.

“Adding AMT to repair capabilities is essential in view of the advanced materials and innovative manufacturing techniques used in building RAAF’s Joint Strike Fighter, for example.”

Research leads to Boxer driver simulator purchase

Deakin University and motion simulation company Universal Motion Simulator (UMS) have welcomed a Defence contract to procure the university-developed Reconfigurable Driver Simulator (RDS) for Rheinmetall’s Boxer vehicles.

The ADF has purchased six RDS systems, to be delivered in 2022.

The RDS includes a common motion platform comprising a robotic arm, an instructor operator station, vehicle specific simulation software and cabin. The cabin simulates the driver’s position of the actual vehicle with replica controls and functions, while the simulation software mimics the physics of the vehicle for the trainee.

The cabin can be removed and replaced with another variant, allowing the simulator to be used for multiple types of vehicles.

Drivers will experience real-life scenarios and realistic vehicle motion while under direction from an experienced Army instructor.

UMS CEO Cameron Selkrig and UMS Director Kerrie Parker joined Minister Sarah Henderson and Director General of Combined Arms Fighting Systems Brigadier



UMS Director Kerrie Parker, Member for Corangamite Sarah Henderson (seated), and ADF Director General of Combined Arms Fighting Systems Brigadier Greg McGlone.

DONNA SQUIRE

“The formation of UMS was a perfect example of universities living their purpose”

Greg McGlone to sign the agreement at the University's Waurin Ponds Campus.

Parker said the formation of UMS as a company to manufacture Australian technology for the Defence market was a perfect example of universities living their purpose to translate the laboratory into real world outcomes.

“Deakin is proud to be leading the transition from plant-based manufacturing to the advanced manufacturing required of the future. This will enable Australia to not just keep up with the new way of designing, building and using commodities, but to be ahead of the pack,” Parker said.

“It is essential that our ADF has access to world-leading systems, resources and training, but it is equally important for both our security and our economy that they are able to source locally-designed and built technology,” Selkrig said.

Defence uses rail for outback transport

The main Adelaide to Darwin rail line has been used for the first time in years for a major movement of defence equipment from the NT to Cultana, just outside of Port Augusta in SA.

The movement saw up to 40 flat-top wagons loaded with military transports and artillery equipment head south under a contract awarded to rail operator Genesee & Wyoming Australia (GWA).

GWA operates nearly 5,000km of track in SA and the Territory, including the 2,200 kilometre Tarcoola-to-Darwin railway.

The military equipment was assembled at GWA's Berrimah rail yards just outside of Darwin for transport to exercises at Cultana this month. GWA has also been awarded the contract for the return journey of the equipment and transports to Darwin.

GWA's CEO Luke Anderson said the Group had worked hard with Defence



1st Combat Engineer Regiment M113AS4 armoured personnel carriers await rail freight to Port Augusta from Darwin. DEFENCE

to provide a strong logistics solution to support the return of this exercise movement to rail.

"This was a great endorsement for rail, getting more trucks off our roads and lowering emissions," Anderson said.

"It is an important project and hopefully the forerunner to further such opportunities between Defence and GWA where the capability of rail to move large consignments safely and efficiently also meets the scope and challenges of Defence's need to have nationwide secure transport and logistics expertise."

Brigadier Andrew Freeman said the ADF welcomed the opportunity to partner with industry.

"The linkage and relationship between the Defence Force and industry continues to grow and strengthen and the exercising of this rail capability is an excellent example of how we can work together," BRIG Freeman said.

"It is an important project and hopefully the forerunner to further such opportunities"

Anywise and BenchOn team on SME talent

At the 2019 Avalon Airshow, Anywise announced the launch of the Anywise Talent Community, powered by the [BenchOn platform](#), to enhance Defence's access to the talent resident in Australian SMEs.

SMEs are heavily influenced by the peaks and troughs of project-based work. This can have devastating effects when projects are delayed, cancelled or market forces become unfavourable. With numerous vendor rationalisation efforts underway, SMEs often face considerable challenges in finding new opportunities and retaining quality staff whilst trying to survive during the lulls.

The software matches project resource requirements to the individual skills,



Anywise is offering the first 15 SME early adopters free use of the system for three months.

ANYWISE

qualifications, experience and availability of businesses employees to expedite supplier resourcing for large projects, whilst protecting each company's proprietary information and preventing conflicts of interest.

"This Talent Community will be key to strengthening the Defence SME base," BenchOn's CEO, Tim Walmsley, said. "It not only supports enterprise by reducing sourcing time from one month to one day, and reporting to meet SME engagement targets, but also provides SMEs with passive business development to allow them to survive and thrive in-between major projects."

"This Talent Community, combined with other existing solutions in the Anywise Partner Eco-System, is now integrated into the DNA of our operations," Anywise Managing Director Adam Evans said. "We now provide end-to-end support to integrated projects with a focus on collaboration and cross-industry access."

To celebrate the launch, Anywise is offering the first 15 SME early adopters free use of the system for three months.

"Our aim is to have 500 high quality SMEs in the community by the end of the year to provide Primes and Major Service Providers the most comprehensive access to the available niche skillsets in the best companies," Evans said.

"This Talent Community will be key to strengthening the Defence SME base"

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PUBLISHED BY

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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

Project Leaders as Humble Iconoclasts

Date 14 March 2019

Location Online, 13:30-14:30

Website [https://iccpm.com/events/
project-leaders-as-humble-iconoclasts-with-dr-kaye-remington/](https://iccpm.com/events/project-leaders-as-humble-iconoclasts-with-dr-kaye-remington/)

A 1-hour webinar hosted by Dr Kaye Remington, internationally renowned author, academic & complex project specialist. In preparation for her book *Leading Complex Projects*, Kaye and her research team interviewed over 100 successful senior project leaders. These highly successful project leaders consistently exhibited certain key characteristics and behaviours. In this webinar, Kaye discusses some of the outstanding characteristics that distinguished those leaders.

Lockheed Martin Australia Combat System Industry Forum #7

Date 19 March 2019

Location Engineering Australia – Level 31, 600 Bourke Street, Melbourne, VIC

Website <https://gateway.icn.org.au/>

Lockheed Martin Australia's Combat System Industry Forum #7 is focused on presenting the opportunity for Australian Industry to participate in an exciting and strategically important program to build and maintain an enduring and regionally superior Australian submarine capability. The forum will allow Engineering and Project Management Professional Services providers to inform industry on the internal resources/processes that the Combat System Integrator (CSI) already has in place.

What Does a Project Manager of the Future Look Like?

Date 28 March 2019

Location EAST Hotel, Canberra

Website [https://iccpm.com/events-2/
what-does-a-project-manager-of-the-future-look-like/](https://iccpm.com/events-2/what-does-a-project-manager-of-the-future-look-like/)

The future success of an organisation relies on the ability to manage a diverse body of talent that can bring innovative ideas, perspectives and views to their work. The challenge and problems created by workplace diversity can be turned

into a strategic organisational asset if an organisation is able to capitalise on this melting pot of diverse talents. Come and join our ICCPM hosted Breakfast Panel Discussion where our panellists will sharing their experiences and perspectives from different industries and positions on managing and leveraging diverse talents.

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.

International Military Writers' Festival

Date 5 – 7 April 2019

Location Double Tree by Hilton Hotel Darwin

Website <https://www.territorytribute.com.au/events/international-military-writers-festival/>

A new three-day festival themed around military writing, the International Military Writers' Festival is part of the inaugural Territory Tribute series of events. The festival will feature author talks, panel discussions and literary sessions bringing together writers, historians and researchers from around Australia to entertain, inform and inspire those with a passion for wartime history. His Excellency General the Honourable Sir Peter Cosgrove AK MC and Festival Ambassador and best-selling author, Peter Fitzsimons AM, will speak at the event. With over 20 sessions and 30 participants, the program offers something for everyone.

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

Website

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 imdexasia.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

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.

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

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.