

DEFENCE WEEK PREMIUM EDITION



Commanding Officer of the IAF's 102 Squadron, Group Captain Prem Anand, callsign 'Andy'.

NIGEL PITTAWAY

Indian Air Force deploys for Pitch Black

Nigel Pittaway | Darwin

The Indian Air Force is participating in Exercise Pitch Black, the RAAF's premier air combat exercise, with aircraft for the very first time.

Pitch Black is taking place between July 27 and August 17 and up to 140 aircraft are participating in multi-national training missions over the NT.

The Indian Air Force was present during Pitch Black 2016 as an observer, but this year decided to attend with both aircraft and ground forces. For PB18 the spearhead of the IAF contingent is a force of four Sukhoi Su-30MKI fighters from 102 Squadron 'Trisonics', based at Chabua Air Force Station in Assam. A single C-130J-30 Hercules from 87 Sqn at Panagarh in West Bengal is also part of the IAF contingent and is providing special operations support to a unit of the IAF's Garud Commando Force, operating on the ground.

The contingent deployed to Indonesia with support

from the IAF's Ilyushin Il-78MKI tankers and further self-deployed to Darwin, where the aircraft are based for the duration of the exercise. As *ADM* revealed

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in July, one of the goals of the exercise for the Sukhois of 102 Sqn is to qualify with the RAAF's Airbus KC-30A multi role tanker transport (MRTT).

Initial trials began on July 30, the opening day of the exercise and, subject to a formal clearance being approved, the KC-30A will support the Sukhois as far as RMAF Butterworth on their way home. The RMAF itself has deployed five F/A-18D Hornets to PB18 and they are also being cleared to receive fuel from the KC-30A.

Commanding Officer of 102 Squadron, Group Captain Prem Anand, callsign 'Andy', told *ADM* that interoperability is one of the major goals for his unit from PB18.

"One of the goals of the exercise for the Sukhoi Su-30MKIs of 102 Sqn is to qualify with the RAAF's Airbus KC-30A"

"The missions we are flying here are mostly air to air and air to ground missions. We are part of a large multi-national force package and we perform whatever roles we are allocated," he said.

"We are exercising with one another and we're certainly improving. The main object of the exercise for us is to improve our capability and learn from each other. It is important to get to know each other's best practices and to improve our relations, and that is only going to get better during Pitch Black.

"We are not using the aircraft's full capabilities in this exercise, because it is an unclassified exercise and we want to leave it at an unclassified level. The roles we are performing do not need large suites of equipment. The aircraft can perform the 1v1 and 2v2

within visual range combat without using other stuff. We have all that we need in the aircraft and are using all of them.

"We will take away a lot from this exercise, the experience gained from coming down here to Darwin, so far away from our home base. There are going to be good practices that we will see and learn. It's too early to say exactly what we will get out of Pitch Black (but) hopefully it will be a lot."

A further report from Exercise Pitch Black 2018 will appear in *ADM*'s Defence Week newsletter next week and an in-depth report will be published in the October issue of the magazine.



An Indian Sukhoi fighter over the NT.

NIGEL PITTAWAY

Changing the game for border security

Ewen Levick | Sydney

Many discussions and articles in the Defence space today talk about the pace of technological change. New innovations are reaching into just about every corner of military operations.

Some things, of course, have been the same for years; the dependable Browning 9mm has been on the hips of Australian soldiers since 1935. Yet even that gen-

erational unifier is set to be replaced by 2022.

"The GIS identifies patterns in human movements that allow US Border Patrol officers to predict routes of travel and increase operational efficiency"

Many of the technologies revolutionising military operations are having similar effects in other areas, including border security. ADM recently spoke with Assistant Chief Patrick Stewart, Branch Chief of the Geospatial Information Systems (GIS) program for US Border Patrol, about how geospatial tech is changing the game.

In a nutshell, GIS is a system that brings together a wide variety of data - maps, location tracking, meteorology, seismology, passive detection, video feeds, even moon phases - into a single system used by agents and analysts across the US to gain full situational awareness.

"We have a range of IoT (Internet of Things)-type devices transmitting data - infrared, seismic, magnetic detections," Steward said. "We send agents out with a high-quality GPS with centi-

metre-level accuracy to map landmarks, drop locations, layout locations.

"We have remote video surveillance, movement sensors as well. Those alert us to high traffic areas and help us classify that traffic.

"We also collect location information for arrests and seizures. Then, as we're moving across an area of operations, we monitor the location of agents as they move."



he GIS feeds information from a wide range of sources into a common platform for full situational awareness.

Essentially, the GIS identifies patterns in human movements that allow US Border Patrol officers to predict routes of travel and increase operational efficiency. According to Stewart, this has revolutionised daily life for agents on the ground.

"Depending on the time of year, subjects may not cross particular areas of the grid," Stewart said. "Moon phases, seasons, weather, rainfall - those types of things factor into how we build our model."

"One of the challenges we have is having to work ungodly long hours, because you get emotionally invested in the activity. You get 12 hours into your ten-hour shift, but you want to stay because you're only twenty minutes away from resolving the situation.

"It's about learning which rabbit holes not to go down"

"Now we have this story we've built [through GIS], you can pass that on to an oncoming shift. Agents don't need to be conflicted between resolving an activity and making it home to important family events."

The system has also improved operational efficiency on a number of indicators.

"We've seen a decrease in the mean time to interdiction. We've seen an increase in the proper recording of results. We've been able to precisely tie activity to devices and demonstrate the value for money of our equipment, which allows us to consider how we allocate our resources."

This performance has seen a number of Australian organisations show an interest in adopting GIS technology.

"I've been surprised at how receptive [Australian organisations] are," Stewart said. "They're really excited about moving forward with a stronger capability.

"The difference is that there's still a lot of different capabilities out there that could be brought back together. You've taken lots of groups with their own way of doing things – how do you get them to work together?"

That, Stewart said, was the primary purpose of his visit to Australia, in which he spoke at the Australian Security Summit in July.

"It's about learning which rabbit holes not to go down," Stewart said.

"We've been down a lot of those already. Why make the mistakes we've already made in the past?"



A US Border Patrol agent scans the Mexican border for signs of activity.

US CBP

To get nukes, or not to get nukes

Jacky Westermann | Canberra

"The uncertainty

surrounding

Washington's

commitment

to overseas

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proved equally

worrying for

Recognised scholars and experts have been exchanging written views on whether Australia's strategic future should include nuclear capabilities.

A recent op-ed in the newspaper 'Welt' has unchained a similar debate in Germany. Prof Christian Hacke argued that Germany would need to acquire nuclear arms, as it is no longer protected through the US nuclear umbrella

> because of uncertainty arising from the Trump administration's policies. In an extreme case of crisis, Hacke wrote, Germany would be without protection and potential aggressors could only be deterred with nuclear weapons.

> Although many politicians, military experts and commentators quickly denied any possible benefits from a German nuclear capability, the debate reveals a larger underlying issue - the deteriorating relationship with the US. In the Financial Times, Guy Chazan calls the op-ed 'nonsense' but also notes that "the anxiety it reflected is real enough."

> The uncertainty surrounding Washington's commitment to overseas engagement has proved equally worrying for Canberra. Stephan Fruehling has argued in the Strategist that only specific circumstances favour Australia acquiring nuclear weapons; Indonesia having a nuclear program, for example, or the undeniable loss of the

US nuclear umbrella.

The Australian debate also considered whether acquiring a nuclear capability is an opportunity to develop local industry and local jobs. However, there are already numerous companies worldwide with decades of experience in the field. Australian companies are unlikely to gain an independent foothold in a hypothetical commercial competition or quickly catch up in expertise. A joint-venture, on



nuclear test at Bikini Atoll in the Marshall Islands.

WIKIMEDIA COMMON

the other hand, may be more plausible; companies from non-nuclear states, such as Italy's Finmeccanica or the Netherlands' EADS, have previously been involved in nuclear production and development.

Nevertheless, like Germany, Australia would also face other obstacles (leaving aside public and political opposition). Whilst Australia has a history of considering nuclear weapons (which is why the facilities at Jervis Bay were established), the Australian Nuclear Science and Technology Organisation (ANSTO) prohibits research to develop nuclear weapons. Australia is also a signatory to the Non-Proliferation Treaty. In short, if Canberra had nuclear aspirations, they'd quickly

come to a legal halt.

"An Australian or German nuclear acquisition would violate the valuesbased international system that Canberra and Berlin rely upon"

From a broader perspective, an Australian or German nuclear acquisition would also violate the values-based international system that Canberra and Berlin rely upon, and may trigger chain reactions of regional nuclear acquisitions.

Hacke also overlooks the fact that Germany partakes in NATO's nuclear capabilities through the policy of nuclear sharing, which sees allies transporting and/or storing US nuclear arms. Furthermore, the UK and France have nuclear arms and are NATO members, which extends their capabilities to all alliance members.

Some are now revisiting an old debate; whether Germany should chip in to the UK's or France's nuclear expenses and

therefore 'acquire capabilities'. While the Bundestag parliamentary research service doesn't foresee any legal obstacles to co-financing, it also found that there wouldn't necessarily be significant advantages to Berlin as Germany is already protected through NATO and EU agreements. Australia is similarly protected under the terms of the ANZUS treaty.

Berlin, however, can make use of the debate's momentum: instead of concentrating on the acquisition question, there is a chance to establish an essential, but hitherto lacking, transparent public discourse in Germany on strategic issues, security and defence politics.

Note: Jacky Westermann is a researcher and editor for the International Program at ASPI.

TOP COMMENTS

Brisbane delivered to the fleet

The SPY-1D(V) is still a very capable radar, it's just more prone to failure with its single high-power transmitter and cannot operate over multiple frequencies within the S-Band simultaneously like an AESA can. Radar range performance is largely determined by the power of the transmitter, so with the size of the antenna and the frequency band it operates in it will likely still have better range performance than CEAFAR2 owing to its very large 3.6m2 radar faces. However, the CEAFAR2 will feature Gallium-Nitride based transmit/receive elements which may tip the scales in its favour until such technology is/can be implemented on SPY-1, which is highly likely in the future considering there are some 90+ SPY-1 radars in US Navy service. – **Joel Robertson**

Space agency seeks industry input

The Australian Space Agency is seeking input from businesses and organisations interested in using space technologies or contributing to the sector.

The input will be gathered through a series of consultations in state capitals over the coming weeks.

The space agency's goal is to "grow a globally respected space industry" and to use space as a vehicle to boost the wider economy. In other words, it is a front door – a policy arm of government that will engage Australian industry.

The consultations' focus is an insight into how the agency is approaching its goal. In a <u>statement</u>, the agency said it is "keen to explore" opportunities in the following priority areas:

- Earth Observation (EO)
- Positioning, Navigation and Timing (PNT)
- Space Situational Awareness (SSA)
- Communications Technology
- Robotics and Automation
- R&D
- Areas of competitive advantage which Australia can leapfrog into.

The consultations are scheduled to occur through state capitals on a rolling basis in the second half of August, beginning with the ACT on August 13 (the full schedule is available here).

The call for business input comes as British analysts predict a huge increase in the demand for small satellites over coming years.

Frost & Sullivan expect launch demand to increase to 11,740 small-satellites by 2030 with revenues reaching \$70.10 billion.

"Small-satellites are the focus of changing space industry dynamics with current rideshare capacity insufficient to meet future small-satellite launch demand,"





Small-satellites are the focus of changing space industry dynamics.

DST

Vivek Suresh Prasad, Space Industry Principle Aerospace and Defence, said.

"Existing players such as Airbus, Eutelsat and Thales Alenia are investing in small-satellite businesses to develop their systems and infrastructure and harness lucrative, future, low-cost small-satellite services."

The analysts argue that significant opportunities will be created by high-volume subsystem demand, on-demand launch services for small-satellites, capacity expansion of global ground station services, and simplified standard platforms for downstream services.

As ADM has reported previously, a number of Australian players – including Adelaide-based start-up Myriota – are already heavily involved in that space. Australia is, it seems, already leapfrogging ahead.

Defence announces Land 200 Phase 3 brief to industry

The Land C3 Program will provide a brief to industry on the Land 200 Battlefield Command Systems (BCS) program and the objectives of Land 200 Phase 3 on 4 September at this year's Land Forces.

"A separate opportunity for oneon-one discussions will be available"

The purpose of the brief and meetings is to provide industry attendees with accurate and consistent information including an overview of the project scope and objectives. The Commonwealth intends to gather information, and analyse industry capability and capacity to provide support to Land 200 Phase 3, including development, manufacture, integration, supply, adaptation, sustainment and disposal of the BCS.

This will also provide an overview of how Defence intends to foster a more productive and enduring relationship with industry as a partner for the BCS capability. Land 200 Phase 3 is scoped to deliver the ADF the following capability elements:

- Expansion of the BCS across Army and to select Navy and Air Force elements
- A Beyond-Line-of-Sight Communications capability
- Dismounted BCS capability (including hardware and communication equipment, not including BMS software)
- Radio modernisation
- A data interface with Joint and Coalition systems
- Technology refresh

Estimated Value:

- Acquisition: \$1 billion \$2 billion
- Sustainment: \$60-90 million annually averaged over 15 years

The brief will be unclassified and a separate opportunity for one-on-one discussions will be available. More details are available here.

ADM will be exploring the various phases of the Land 200 program in the September edition of the magazine.



Australian Government

Department of Defence

Airbus and Sydney Uni partner for innovation

An agreement between the University of Sydney and aeronautical manufacturer Airbus will connect some of the world's leading aeronautical experts with Australia's future engineers.

"This program will give students best available insights into the opportunities available in the aviation and aerospace

The University's Faculty of Engineering and Information Technologies has joined the Airbus Global University Partner Program.

The partnership will allow the University and Airbus to collaborate in a number of areas: funding students to participate in innovation programs at Airbus facilities around the world; giving aerospace, mechanical and mechatronics engineering students access to Airbus' campus team; and allowing students to partake in global exchanges.

A total of 22 universities in 12 different countries currently participate in the initiative.

In a statement, Faculty of Engineering and Information Technologies Dean Professor Willy Zwaenepoel said the new partnership will complement what students learn on campus.

"This program will give students the best available insights into the opportunities available in the aviation and aerospace

industries," Zwaenepoel said.

"It's a two-way street. The University's mechanical, aeronautical and manufacturing engineering program is the highest-ranked in Australia. We're confident Airbus will benefit from having access to talented students who are learning about the latest research in areas ranging from aerospace structures to flight guidance, navigation and control."

"It is great to see the University of Sydney included in this international collaboration effort from Airbus," Mr Mal Benfer, Vice-President Airbus Australia Pacific, added.

A local signing ceremony in Sydney will be followed by a formal signing in November at the Zhuhai Air Show in China.



artnership will allow the University of Sydney and Airbus to collaborate in a number of areas

Research sheds light on **Queensland Defence community**

Queenslanders now have a comprehensive picture of the size and needs of the state's Defence community, including current serving personnel, veterans, and their close relatives, for the first time.

DEFENCE WEEK

480,000 Queenslanders have a connection to Defence through an immediate family member or friend"

RSL Queensland has released the Defence Family Research Project (DFRP), which reveals that that almost 197,000 people in Queensland are serving or have served in the ADF. An additional 480,000 Queenslanders have a connection to Defence through an immediate family member or friend.

RSL Queensland State Secretary Scott Denner said the organisation wanted to shine a light on the wider Defence community, its size, location, issues and challenges so that the RSL can better meet its changing needs and advocate on its behalf.

"What we knew anecdotally - and have now confirmed through this research - is that many of those leaving Defence need our support with employment and education, DVA claims, physical and mental health challenges, relationship guidance, financial advice, adjustment to civilian life, physical fitness and an ongoing sense of purpose," Denner said.

"Most service personnel agree that their experience is unique and unforgettable, and that the experiences, skills and discipline developed during their service shapes who they are.



Members of the ADF at a local community event in Bowen, QLD. 480,000 Queenslanders have a connection to Defence. DEFENCE

"However, our research confirms that the transition out of Defence often brings great upheaval and change – they lose their job, income and career, their purpose and home, all at once. For many, this has a profound impact on their quality of life and wellbeing.

"Regardless of whether they choose to leave or are medically or involuntarily discharged, many struggle to find meaningful employment that uses their expertise," Denner said. "Many find their household income is substantially lower but they have more expenses in the civilian world, causing considerable distress for both the veteran and their family."

"I'd urge anyone in need of help to get in touch sooner rather than later"

The Defence Family Research Project highlights critical concerns for veterans, such as finding employment, trying to get DVA claims accepted, enabling their mental health, and dealing with family responsibilities and pressure.

"These are exactly the crunch points where RSL Queensland steps in," Denner said.

"We have a growing range of services available to all in the Defence family and I'd urge anyone in need of help to get in

touch sooner rather than later.

"For example, hundreds of veterans have gone through the RSL Employment Program to learn how to translate their skills, perform well in interviews, and secure productive jobs.

"Our Homelessness Program is helping homeless veterans and their families to get back on their feet and find safe, affordable, long term housing.

"Each month, we also help hundreds of veterans process their DVA claims, visit dozens of veterans in hospital, and provide health and rehabilitation programs to hundreds more people across the state."

The Defence Family Research Project has been provided to government and other ex-service organisations to help inform veteran services across the state.

"The huge amount of information in this report will guide RSL Queensland going forward, and make sure that the services we provide fully meet the needs of our Defence family," Denner said.

MOST READ ONLINE AT WWW.AUSTRALIANDEFENCE.COM.AU



- 1. Essington Lewis awards winners announced
- 2. Chemring and Quickstep to develop F-35 countermeasures
- 3. Brisbane delivered to the fleet
- 4. Trinidad and Tobago buy two Austal patrol boats
- 5. Accenture opens digital tech hub in Canberra

Brisbane women take part in Aviation Camp

Five Brisbane-based women were among 17 women who recently attended the inaugural Air Force Aviation Camp for Women at RAAF Base Amberley.

Bethany Irvine, 18, Karen Hau, 21, Kristiane Grafton, 22, Natasha Barclay, 28, and Cassandra Newnham, 30, experienced military aviation, including aircrew,

"Flight and Technical camps for young women have been running since 2013 and have produced positive results with 80 per cent of participants actively pursuing ADF careers"

engineering and technical roles first hand, and the day-to-day routine of an Air Force base. Participants also met with Air Force members and Defence Force Recruiting specialists to discuss career opportunities.

The group signed up for the camp to learn more about aviation roles in the Air Force.

Irvine said the flight in the C-17 Globemaster was the highlight of the camp. Hau and Barclay agreed.

"It was an incredible opportunity to get to fly over Brisbane and experience how manoeuvrable the aircraft is, especially during tactical flying operations," Hau said.

"When they opened the rear loading door it was perhaps a once in a lifetime experience," Barclay said.

For Newnham, the activity that stood out the most was the opportunity to try the Super Hornet simulator.

Newnham said if she were to join the Air Force, she would work to continually progress personally and professionally.

"I would prefer to enter via the Officer Entry pathway with the intention of learning as much as possible to continue upwards through the ranks. I would also like to assist other women to have the confidence to join and enjoy the benefits that come with it."



DEFENCE

"To be the strongest possible organisation, Air Force needs to be able to recruit from the entire talent pool in the Australian community"

Aviation Camp Officer in Charge, Squadron Leader Elise Stade, said Air Force is strongly committed to enhancing a more diverse and inclusive work environment, and recognises that diversity is key to capability – a point brought up by numerous speakers at the recent **Women in Defence Awards**.

"To be the strongest possible organisation, Air Force needs to be able to recruit from the entire talent pool in the Australian community, both women and men," SQNLDR Stade said.

"Flight and Technical camps for young women have been running since 2013 and have produced positive results with 80 per cent of participants actively pursuing ADF careers through Defence Force Recruiting. Due to the success of the camps,

Air Force was pleased to deliver the inaugural Aviation Camp for Women." SQNLDR Stade said it was rewarding to share her insights and technical expertise with participants at the camp.



Air Force Aviation Camp for Women participants with a C-17A Globemaster

DEFENCE

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Forthcoming Events

ADM EVENTS

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

- ADM STEM in Defence Summit 21 August 2018
- ADM Defence Estate & Base Services Summit 19 September 2018
- ADM Defence in Northern Australia Summit 10-11 October 2018

BMT's Submarine Design and Engineering course

Location Adelaide

Date 6-10 August

Website trainingcourses@bmtdt.com.au

This course is ideal for anyone currently working or considering working with submarines; offering a comprehensive design and operational appreciation of conventional submarine technologies. This course is accredited by the Royal Institution of Naval Architects. Since its inception in 2009, this Australian course has earned a reputation for providing delegates with practical and current knowledge, and is an important collaboration between BMT and other submarine experts from around the world. The network of presenters provides significant professional development and networking opportunities for those working in the submarine industry.

Project and program management symposium

Date 14-15 August

Location Rex Hotel, Canberra

Website www.pgcsymposium.org.au

The annual Project and Program Management Symposium provides a forum that brings together project management people to share knowledge and improve the governance and controls skill sets available to deliver successful project outcomes for the nation. A highlight of the symposium is its access to thought leaders from the USA and Europe. Each year, selected speakers from overseas are brought to the symposium to share knowledge and provide an international perspective on project and portfolio management.

Scindicate 2018

Date 29-30 August

Location Scindicate Labs, Fisherman's Bend, Melbourne
Website https://scindicate2018.eventbrite.com.au

SCINDICATE is the new brand name for the previous annual external engagement event called Partnerships Week. SCINDICATE delegates will experience technology demonstrations, workshops, briefings and laboratory tours, as well as opportunities for networking and forging new collaborations. Delegates can choose to attend on either day, and the program will include key elements repeated across both days.



Williams Foundation Seminar: The Imperative for an Independent Deterrent

Date 23 August 2018

Location National Convention Centre

Website http://www.williamsfoundation.org.au/events

With the retirement of the long-range F-111, Australia's future air strike capability now rests in the capabilities of the F/A-18F Super Hornet and F-35A, both equipped with appropriate long-range strike weapons and supported by a capable air-to-air refueling force. An independent strike capability expands the range of options to achieve Australia's strategic ends; signals a serious intent and commitment about Australia's national security; and has the capacity to influence strategic outcomes short of resorting to armed conflict.

Hunter Valley Defence Conference 2018

Date 30-31 August 2018

Location Crowne Plaza Hunter Valley

Website HunterNet

The 2018 Defence Conference will focus on driving collaboration and engagement between Defence Primes, the region's SME's, academia and Defence. A highlight of the conference will be the spectacular low flying aerial show from Matt Hall Racing, followed by a gala dinner.

Land C3 Program Brief To Industry — Land 200 Phase 3 — Battlefield Command Systems (Tranche 3)

Date 4 September

Location Adelaide Convention Centre
Website https://www.tenders.gov.au

The Land C3 Program will provide a brief to industry on the Land 200 Battlefield Command Systems (BCS) program and the objectives of Land 200 Phase 3 on 04 September between 0830h-0950h. Defence will present project details to industry and conduct one on one meetings in conjunction with the Land Environmental Working Group and Land Forces Conference in Adelaide in September 2018. The purpose of the brief and meetings is to provide industry attendees with accurate and consistent information including an overview of the project scope and objectives.

Land Forces 2018

Date 4-6 September 2018

Location Adelaide

Website www.landforces.com.au

Presented in collaboration with the Australian Army, LAND FORCES 2018 is an international industry exposition to showcase equipment, technology and services for the armies of Australia and the Indo-Asia-Pacific.

ISCILP 2018

Date 5-6 September 2018

Location Adelaide Convention Centre

Website https://www.landforces.com.au/ICSILP/program.asp

This year's conference brings Army and Defence Science and Technology closer than ever before in exploring future capability options for warfighting success in a fast-changing environment. Many of the delegates attending ICSILP18 will play key roles in harnessing novel technologies for the development of the required solutions. This presents an excellent networking and knowledge exchange opportunity.

ANI Goldrick Seminar

Date 17 Sep, 2018 Location ADFA, Canberra

Website https://navalinstitute.com.au/

ANI will be holding its annual Goldrick Seminar at ADFA – with the title Naval Shipbuilding as Strategy. The event is well-attended every year by senior serving officers and by defence industry.

ICCPM 2018 Thought Leadership Roundtable

Date September 21, 2018
Location Canberra, Melbourne
Website admin@iccpm.com

The International Centre for Complex Project Management (ICCPM), in collaboration with the John Grill Centre for Project Leadership and our sponsors, the QUT Graduate School of Business, KPMG and Bright Consulting, are delighted to invite you to attend this open discussion workshop which seeks to bring together the collective wisdom of senior leaders from both public and private sector organisations to share perspectives on project leadership.

18th Australian Space Research Conference

Date 24 Sep – 26 Sep, 2018

Location Mantra on View Hotel, Gold Coast
Website http://www.nssa.com.au/18asrc/

The 18th Australian Space Research Conference (ASRC), will be held at Gold Coast in Queensland over September 24-26. The ASRC is intended to be the primary annual meeting for Australian space research. It welcomes space scientists, engineers, educators, and workers from across the university, industry and government parts of the space sector, and is not limited to Australian-based research. International participants are most welcome. The scope of the conference includes fundamental and applied research, operational matters, technology, and use of space data and facilities. We are accepting abstracts until July 14.

Systems Modelling Conference 2018

Date 04 October 2018

Location Adams Auditorium, UNSW Canberra

Website https://www.unsw.adfa.edu.au/conferences/

systems-modelling-conference-2018/home

Systems thinking and modelling is the science of integration, where every system is conceptualised as a set of inter-related components. Systems thinking and systems modelling provides a problem solving approach that helps us develop the capacity to understand and manage complexity in a systemic way and how to deal with it in multi-stakeholder situations. The Capability Systems Centre in partnership with IEEE runs a one day conference on the use of whole-systems approach to design and manage complex problem in socio-technical and socio-ecological systems. The daylong conference on October 4th will feature showcases on the use of systems thinking and systems modelling in a wide range of areas.

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

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

11-14 November 2018 **Location** Adelaide Convention Centre Website http://www.corrosion.com.au

Showcasing the latest advancements in corrosion mitigation, C&P 2018 is the largest corrosion conference and exhibition in the Southern Hemisphere. 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

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.

TEAM DEFENCE AUSTRALIA EVENTS

- AUSA 2018 8-10 October 2018, Washington DC, US
- Indo Defence 2018 7-10 November 2018, Jakarta, Indonesia
- Euronaval 2018 23-26 October 2018, Paris, France

For more information go 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.