

ADM AUSTRALIAN DEFENCE MAGAZINE
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PREMIUM EDITION



Construction on the Australian GCS program will begin in 2020 with test modules.

© BAE SYSTEMS

Sea 5000: Behind the BAE Systems win

Julian Kerr | Sydney

Superior antisubmarine warfare (ASW) capabilities have emerged as the primary although not the only driver behind the selection of BAE Systems' Type 26 Global Combat Ship (GCS) over its Italian and Spanish rivals to provide the RAN's next generation of major surface combatants.

Commenting on the 29 June announcement that nine Australianised Type 26/GCS would replace the RAN's eight Anzac-class frigates under Project Sea 5000 at a cost of \$35 billion, Defence Minister Marise Payne stressed that the decision was "entirely based on capability, the best capability to equip the navy in anti-submarine warfare".

Similarly, Prime Minister Malcolm Turnbull said the next-generation frigates, to be known as the Hunter class in RAN service, would be "the most advanced anti-submarine warships in the world".

The 6,900-tonne BAE Systems' design competed in a lengthy comparative evaluation process (CEP) against the 6,200-tonne ASW variant of the FREMM

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multi-mission frigate offered by Fincantieri of Italy, and an ASW evolution of the F-100 Alvaro de Bazan-class design on which the RAN's air warfare destroyers (AWDs) are based, proposed by Spanish shipbuilder Navantia.

Although construction of the first of eight Type 26s for the launch customer, the UK's Royal Navy, began only last July, Defence confirmed to the Australian National Audit Office last December that sufficient data had been provided for the design to be considered mature.

The winning design has now been frozen to facilitate contractual agreement for the program – expected by the end of the year – finalise industrialisation issues, and allow the procurement of long-lead material.

Although continuing to focus primarily on ASW, Sea 5000's top-tier requirements were nevertheless progressively extended to also include significant anti-air and anti-ship missile defence.

The result will be a class whose all-round capabilities up to and including Task Group-orientated warfighting will closely resemble those of the three 7,000-tonne AWDs.

Nigel Stewart, head of BAE Systems' SEA 5000 bid team, said the Type 26/GCS included an outstandingly low acoustic signature, power, weight and space reserves sufficient to facilitate upgrades over the ships' life-of-type, open architecture and modular construction to accommodate differing systems, and operational flexibility provided by an amidships mission bay.

"I think secondary to that was BAE Systems' strong Australian footprint – 65 years in the country, 3,500 personnel, and the work we've put in to deliver a strong Australian industrial content. The long-term strategic relationship with the UK was also very important," he told *ADM*.

A further benefit was the derisking aboard the Royal Navy's well-regarded Type 23 ASW frigates of many of the systems that will be deployed on the Hunter-class, including the vital Thales Type 2087 variable depth towed array sonar.

Furthermore, the company was already familiar with systems mandated for Sea 5000. It manufactures the Mk 45 Mod 4 5-inch gun, produces components for the Evolved Seasparrow Missile (ESSM), supports Aegis combat systems for the US Navy, and installed CEAFAAR radars on the Anzac fleet as part of the successful anti-ship missile defence (ASMD) upgrade.

Stewart said the newly-developed CEAFAAR2 S/X/L band active phased array radar destined for the Hunter class would require a new structure. Although the weight was not an issue "it's a much larger, more powerful radar than what will be on the Type 26 and it needs more space".

Construction of the new class will begin in December 2020 with prototyping at Commonwealth-owned ASC Shipbuilding at Osborne. First steel will be cut in 2022 and delivery of the first-of-type is anticipated in 2025-27 with "around about" 65-70 per cent Australian content, Stewart said.

ASC will become a wholly-owned [subsidiary](#) of BAE Systems during the build process, with the UK company to be fully responsible and accountable for the ships' delivery.

After construction is completed, the Commonwealth will resume full ownership of ASC, retaining intellectual property, a skilled workforce and the associated equipment.

"The newly-developed CEAFAAR2 S/X/L band active phased array radar destined for the Hunter class would require a new structure."

Australian construction is predicated on batches of three, utilising the same digital manufacturing process installed in BAE Systems' Glasgow yard for Type 26 production. The present Osborne schedule involves completion of a ship every two years but sufficient capacity at the upgraded and expanded facility was available to either accelerate construction or build other ships concurrently, Stewart said.

Overlapping of UK and Australian construction was not seen as a problem.

"We're in full production in the UK and our design team there is now beginning to run down, so that gives us full bandwidth to support the modifications of the Sea 5000 program," Stewart said.

"With ASC we'll have a strong ship-building team to start with and in Australia there's plenty of combat system skills and experience."

Combat system integration details have yet to be disclosed, but Stewart said the intention was to carry this out as a team headed by BAE Systems but working with Lockheed Martin (selected last October to provide the ships' Aegis combat management system), Raytheon, and Saab.

Australian Space Agency open for business

Katherine Ziesing | Canberra

Since the new [Australian Space Agency](#) launched on July 1, the local space community has been coming out in force to support the renewed interest in all things space related for the nascent body.

"Some may argue that Australia may be late to the party, but we are entering a time where the space sector is moving from the realm of government to the commercial world," Dr Megan Clark, head of the new agency said in an open letter. "Our Agency will be one of the most industry-focused space agencies in the world, engaged internationally and demonstrating Australia can be a leader



Australia has been involved in various space pursuits for decades but is now making a concerted effort to expand this presence. © GETTY

and a responsible global citizen, drawing on our home-grown Aussie ingenuity.

“No other industry can inspire nations quite like space, where human ambition can set its sights on interplanetary missions, colonisation beyond Earth and the opportunity of finding new life. We can dream this big because of the space-based technologies that have connected the world in unprecedented ways, and in the coming decades Australia has the opportunity to become a global leader in pushing Earth’s links with space even further.

“We look forward to building a space agency of which all Australians can be proud,” Dr Clark said.

“Space is a global industry worth over \$400 billion annually and growing in double digits every year.”

With this in mind, the agency is running a number of [consultations](#) to get the ball well and truly rolling.

“The time is right for this important national initiative that will build on our scientific and industry strengths. We congratulate the Australian Government for its foresight and commitment,” Dr Naomi Mathers, deputy chair of the Space Industry Association of Australia. “We are delighted that Dr Megan Clark AC has accepted the role of inaugural Head of the Australian Space Agency and we look forward to offering the support and experience of the SIAA to the important work of Dr Clark and her colleagues. We wish them well.”

Within the Defence community it is easy to think of space as a warfighting domain, but this is not the case for much of the wider community. The value of space services to the community and economy were on show at the [ASPI Space conference](#) as was the opportunity for many [companies](#) to tout their space credentials. Australia has a long history of space thinkers and technologies in the civilian world, with many nationals finding professional support and opportunities overseas. There is hope that some of these people can find their way back to Australia, either via local companies or Australian subsidiaries of international companies.

“Australia’s spatial and other professionals have long been leading figures in space programs around the world. Despite this, we have – until now – been the largest first world economy without a national space agency,” Gaby van Wyk, president of the Surveying & Spatial Sciences Institute (SSSI) said.

“Space is a global industry worth over \$400 billion annually and growing in double digits every year. The economic and community multipliers for this industry are huge. Australia should be better positioned to lead and benefit from this, and thanks to the new Australian Space Agency we now are.

“The Australian space program will have a positive impact on so many aspects of our lives: technology, the environment, agriculture, transport and infrastructure planning, mining, smart cities, education, health, aviation and many more,” van Wyk said.

SSSI is the national peak body catering for Australia’s spatial information professionals,



Some antennas under the Milky Way, perhaps looking for intelligent life in the space.

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representing the interests of the spatial science community, nationally and internationally. SSSI represents Australia's interests within the Asian Association on Remote Sensing (AARS) and the International Society of Photogrammetry and Remote Sensing (ISPRS).

Dr Petra Helmholz, chair of SSSI's remote sensing professionals, said, "our remote sensing professionals are delighted that their long-standing support for the establishment of a domestic space agency has finally come to fruition.

"SSSI members look forward to the certainty and long-term growth of the domestic space industry. We believe that the Australian Space Agency will build further on our significant capability, capacity and international leadership in Earth Observation.

"SSSI and all our spatial professionals are committed to supporting and working closely with the Australian Space Agency. Our members bring broad expertise including a focus on Earth Observation and its importance to Australian industry, greater value to national and regional projects, expanded industry involvement in applications, and strong leadership of cross-sectoral collaboration for the space industries.

"SSSI and our members have a deep commitment to this: together we will deliver outstanding scientific, commercial and community outcomes for the Australian Space Agency and for our community," concluded Dr Helmholz.

Boeing works with RDA Hunter on STEM development

Kate O'Mara | Hunters Hill

According to the Foundation for Young Australians' (FYA) report series, The New Work Order, employers are paying a premium for people with skills in digital literacy, critical thinking, creativity and teamwork. These so-called enterprise skills are quickly becoming the 'new basics' and will soon be essential for securing employment.

Jan Owen AM, CEO of FYA, reinforced this idea at the recent RDA Hunter STEM Workforce Conference, talking about a need in the workplace for cultural intelligence. She said we need to equip, inform and inspire young people to navigate the future of work by thinking about how their skills are portable for other jobs.

Providing a workforce with both technical and enterprise skills has long been on the agenda of RDA Hunter's STEM Workforce initiatives.

"Since 2009, we have been working in close partnership with Hunter industry to make sure students have skills in specific areas of competence. Enterprise skills, or what we used to call 'soft skills', are absolutely essential to succeed in the current workplace," Trevor John RDA Hunter's director of Regional Development said.

RDA Hunter's STEM Workforce Manager, Rick Evans, observes that, "On-the-job training is increasingly prevalent in the Hunter because of the highly technical, niche projects currently underway here. Companies are looking for young people with the right combination of skills – people that have STEM knowledge, but

that are also able to adapt, work in teams and think critically about solutions to problems we haven't had to solve before. Our programs are focused on building these skills in addition to technical knowledge."

Launched in 2017 as part of RDA Hunter's most mature STEM program, ME, STEM-Ex was established to funnel students who show the right combination of skills into Hunter industries that need them. It exposes students to the role enterprise skills play in successful project delivery by embedding them in real project teams.

"STEM-Ex presents a unique opportunity to engage students at a pivotal point in their lives and inspires them to pursue STEM based careers. Industry partners

are absolutely critical to the success of this program. The quality companies we partner with has increased the activity's popularity with students and is the reason we've had to introduce a competitive entry system," Evans said.

Boeing has a strong presence in the Hunter, sustaining and upgrading the RAAF's fleet of F/A-18A/B Classic Hornets, E-7A Wedgetail aircraft, and training RAAF crews to fly the E-7A and Mission System crew to operate the E-7A. The company is a vital ME Program partner and a supportive participant in STEM-Ex.

According to Matt Sprakel, Boeing Defence Australia's (BDA) Classic Hornet chief engineer and Boeing's STEM-Ex lead in Hunter, the aerospace industry will be highly active for at least 50 years in the region and companies like Boeing will continue to have a requirement for skilled people.

"We maintain a large workforce in the Hunter that has a diverse range of skills and qualifications. For the foreseeable future we'll need people with the technical and non-technical skills to work in teams on some of the most challenging and complex sustainment and development programs for the ADF.

"STEM-Ex is a cost effective and reliable option for us to inspire students to pursue a career in one of the most exciting industries in the world. It also helps us to identify and encourage a local talent pipeline of young people with the interest and drive to succeed in the aerospace sector," he said

"Work experience has shown me that direct contact with aircraft is what I really want to do."



Students were able to spend time on the Wedgetail simulator as part of their experience.

© NIGEL PITTAWAY



Sustainment for the Classic ornet fleet is also done by Boeing.

© DEFENCE

In 2018, STEM-Ex is connecting 35 students in years 11 and 12 from Hunter high schools with Defence prime contractors and defence industry in the region.

Students studying STEM subjects in years 11 and 12 are invited to nominate for week-long placements at participating Hunter companies. Host companies embed students in their 'real' project teams and immerse them in actual project work.

Boeing Defence Australia hosted students from Cessnock High School and Hunter River High School last month. Students were placed with Boeing's Wedgetail In-Service Support team and the FA-18 Classic Hornet Sustainment Support team at RAAF Base Williamtown to gain an introduction to the world of aerospace.

They were also exposed to the Engineering Development Environment and Software Verification and Validation Environment that supports the E-7A Wedgetail aircraft. Over 130 engineers with various specialties work to upgrade the mission system of the Wedgetails. The highly secure facility develops new technologies and systems and tests them. Students were 'blown away' to see that Boeing encourages its engineers to innovate by setting and monitoring 'what if' scenarios in a specially-designed facility where environmental conditions can be simulated and hypotheses tested.

Additionally, and excitingly for them, students were each allowed 30 minutes access to Australia's only E-7A Airborne Early Warning & Control (AEW&C) flight simulator. Used to train Wedgetail pilots in an intense two-year program, the simulator is in constant use at Boeing's Williamtown facility. Students took simulated flights across Newcastle, under Sydney Harbour Bridge and from Nellis Air Force Base in Las Vegas

"The simulator was awesome," Kyle Gosper from Cessnock High School said. "I'm an Air Force Cadet, so flying it was a thrill and topped off a great week at Boeing. Work experience has shown me that direct contact with aircraft is what I really want to do. Seeing real jobs and doing them eight hours a day really helped me decide if I want to do it forever – and I do!"

Students were surprised to learn that an engineering job at Boeing doesn't necessarily mean a university qualification.

"We're very keen to let students know that university isn't the only path to engineering jobs. Not all Boeing employees begin their career holding a university degree – many of them have taken non-Engineering pathways. They've honed their skills across many projects, they've added qualifications based on their interests and they've re-trained along the way," Sprakel said.

"I think it's a great takeaway message for students visiting us. Boeing is an exciting place to work – we're delivering internationally significant projects and there are so many opportunities. But it's important that young people understand that a career with Boeing is flexible – there are options and often where you start with the company can be very different to where you end up."

The Hunter has a long list of important long-term defence contracts currently underway. With projects slated to continue until at least 2070, the ongoing demand for good staff is high. Defence primes and downstream industry are competing for the small pool of skilled people available in the region – which isn't ideal.

"We're working on an industry-wide, collective approach to getting the right people into the sector as a whole. Jobs are available at all levels so we're banding together and working with RDA Hunter and local schools on activities like STEM-Ex to help build the workforce we need," Sprakel said.

"STEM-Ex is connecting 35 students in years 11 and 12 from Hunter high schools with Defence prime contractors and defence industry in the region."

Aegis FMS for Australia and Spain

Katherine Ziesing | Canberra

The US State Department has made a determination approving a possible Foreign Military Sale to Australia of equipment associated with the integration of the CEAFAAR 2 Phased Array Radar System with the AEGIS Combat System for an estimated cost of US\$185 million.

The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale last week, days before the [Sea 5000 down select announcement](#). Spain also bought five Aegis shipsets that week for their frigate program, the F-110; an evolution of the F-100 class in service with Spain and Australia.

The Government of Australia has requested to buy long lead items, engineering and development activities, establishment of engineering development sites, and commencement of development activities associated with the integration of the CEAFAAR 2 Phased Array Radar System with the Aegis Combat System. Included are Aegis Weapon System Technical Equivalent Components including Command Display System (CDS) Consoles (including 2 consoles in Gun Weapon System configuration); Multi-Mission Display (MMD) systems, including projectors, sensors and cameras; Tactical Equivalent Core Computing System

(CCS) Cabinets; Tactical Equivalent Aegis LAN Interconnect System (ALIS) Cabinets; Tactical Equivalent Aegis Conversion Equipment Group Input/Output (ACEG I/O) Cabinets; Tactical Equivalent Advanced Storage Area Network (ASAN) Cabinets; Global Command and Control System – Maritime (GCCS-M); Cooperative Engagement Capability (CEC) sites systems, to include processing rack, simulation equipment and workstation; AN/SPQ-15 Converter/Receiver and /signal data converter equipment; Defense Visual Information Distribution Service (DIVDS) cabinet; AN/SQQ-89 Sonobouy Processing Core Computing System racks, with console and laptop; Aegis simulator racks and workstations; Aegis Training System; and various ancillary equipment and support products, including desktop computers, displays, test units and compilations servers, printers, workstations, spares, cabling and software licenses. Also included are spare and repair parts, support and test equipment, engineering and technical services to support sites equipment, U.S. Government and contractor engineering, technical and support services, engineering technical assistance, other technical assistance, and other related elements of program and logistics support.

ADM Comment: While Australia has opted for the Global Combat Ship (GCS) for Sea 5000's Future Frigates, both the FFG(X) in the US and CSC for Canada are still open.

GSC is a contender for the Canadian program but not the US program where the competition has specifically asked for designs in the water, in service. Speculation that three of the five eyes community could potentially be operating variants of the GCS is rife.

Should the GCS be successful in Canada, the variant differences between the RN, RAN and Canada would be significant, given localisation of the designs. The UK fitout of the Type 23 and Australia's Hunter class (Aegis/Saab combat management system, CEA radar and other yet to be determined Australian-specific elements to be confirmed through the design process) are substantially different from the outset.

A Canadian variant would undoubtedly have its own development path based on the GCS design. *ADM* will keep an eye out for how the US, Canadian and UK frigate programs develop and perhaps influence our own efforts under Sea 5000.



How common the RN and RAN Type 23/Hunter class will be at the end of their respective programs remains to be seen. © DEFENCE

“GSC is a contender for the Canadian program but not the US program where the competition has specifically asked for designs in the water, in service.”

Wearable counter-drone technology for soldiers

Danish company MyDefence has launched Pitbull, a wearable Counter UAS solution that utilises smart jamming to defeat enemy drones.

Pitbull was developed to have minimal impact on other signals while jamming, in an effort to maintain own communications. The Counter UAS jammer is a tactical solution weighing just 775 grams, designed to be worn on the uniform with the purpose of minimising the cognitive load of dismounted soldiers, so they can focus on the mission instead.

“Pitbull is plug-and-play and requires minimal training to operate.”

Last month MyDefence launched the Wingman 103 – wearable drone detection for special operations forces – and now joined by the Pitbull, dismounted soldiers will be able to both detect and defeat enemy drones. Pitbull is plug-and-play and requires minimal training to operate. Used together with the Wingman detector, the entire process of detecting and defeating malicious drones can be fully automated, allowing the operator to carry on with the mission without worrying about enemy drones.

“This is a big leap in the technological advancement of active countermeasures against malicious drones,” CEO of MyDefence, Christian Steinø said. “There exists an immediate demand in the Counter UAS market for wearable solutions for dismounted soldiers that does not interfere with their function in a unit.”

The initial version of Pitbull features up to 20 hours standby battery time and two hours of active jamming. The Pitbull has an effective jamming range of 1,000



Pitbull can work independently as a jammer but can also be paired with Wingman as a detection tool.

© MYDEFENCE



Pitbull and Wingman at work.

© MYDEFENCE

metres and can be fully automated in collaboration with the Wingman wearable drone detector.

“The Pitbull drone jammer will, based on the detection signals from the Wingman, automatically start jamming the control signals of the detected drones. Pitbull requires no training – simply turn on the devices and you are protected against detected drones, making it ideal for dismounted soldiers, who can instead focus on their mission,” Steinø said.

Norwegian JSM test missiles for JSF contract

Kongsberg Defence & Aerospace AS has signed a contract worth 700 million NOK (AUD\$ 116 million) with the Norwegian Defence Materiel Agency for JSM test missiles for the integration phase on the F-35.

As a result of the successful flight test in March and finalisation of the development phase in June, the project enters into an F-35 integration phase up to 2023. This phase includes delivery of a number of test missiles, captive-carriage, safe separation, and live firing tests.

“The JSM project continues on schedule and is the only 5th generation missile available on F-35 representing a significant market potential,” according to Eirik Lie, president Kongsberg Defence & Aerospace AS.



Kongsberg continues to carry out testing on the JSM in preparation for the F35 program

© KONGSBERG

French scholarships highlight Flinders leadership

Ten Flinders University students are set to kick off international careers with a number of leading French companies, following their success in the June 2018 round of Nicolas Baudin 'Internships in France' scholarships, where they claimed more scholarships of any participating Australian university.

Industry partners such as Naval Group, Cementys, Semofi and Thales will provide internships for Flinders University students for between three and six months, in collaboration with world-class higher education partners in France.

The successful students will undertake industry-focused research projects in areas such as marine technology, advanced manufacturing, structure and material engineering and even earthquake engineering.

Flinders University vice-president and Pro vice-chancellor (International) Sebastian Ranekold says the internships are a wonderful opportunity for Flinders students to gain invaluable industry experience and to connect with the University's overseas partners to develop research of global significance.

"Our success reflects the exceptional skills and global ambition of our students as well as the strong educational and research links between Flinders University and French institutions such as Centrale Nantes, Centrale Supélec and ENSTA Bretagne," Ranekold said.

In addition to the important industry experience, the Flinders students will receive a Flinders University mobility grant and a monthly French stipend. Select students will also receive a travel grant awarded by the Embassy of France or the host French university.

In May 2018 Flinders University became a signatory with other members of the Innovative Research Universities (IRU) Network to the Nicolas Baudin 'Internship in France' initiative offered by the Embassy of France in Australia.



Flinders University College of Science and Engineering student interns heading for France (back row, left to right) Dalton Rieck Master of Engineering (Civil), Arslan Ahmad Bachelor of Engineering (Civil) (Honours), Jayden Grigg Bachelor of Engineering (Electronics) (Hons), Matthew Evans Bachelor of Information Technology (Digital Media) / Bachelor of Software Engineering (Hons), Chris Przibilla, Bachelor of Engineering (Civil) (Hons) and (front) Larissa Pearce, Work Integrated Learning Coordinator, College of Science and Engineering and Caitlin Kramer Bachelor of Engineering (Robotics) (Hons). © FLINDERS UNIVERSITY



(L-R) Northrop Grumman Australia Chief Executive Ian Irving, The Canobolas Rural Technology High School teacher Matt Scott and students Ella Draper and Mark Selmes, Northrop Grumman chairman and CEO Wes Bush, Sunshine College students Miette Petrarca and Talita Tran and teacher George Hatzkostas, and Northrop Grumman Chief Global Business Development officer Dave Perry.

© NORTHROP GRUMMAN

Northrop Grumman Foundation support rural STEM students

The Northrop Grumman Foundation announced that it is sponsoring two students and one teacher from The Canobolas Rural Technology High School in Orange and two students and one teacher from Sunshine College, in Melbourne, to attend Space Camp at the US Space and Rocket Center in Huntsville, Alabama.

This is the fourth year the Northrop Grumman Foundation has supported Australian students and teachers to participate in the program, which aims to excite and inspire the next generation of space leaders, explorers, scientists, teachers and engineers.

“We are thrilled to be able to support passionate Australian students and teachers in building their skills and interest in space,” Ian Irving, chief executive, Northrop Grumman Australia said. “Northrop Grumman remains committed to empowering the next generation of leaders in STEM who’ll go on to contribute to advancements in science and technology, vital to Australia’s future prosperity and security.”

Wes Bush, chairman and chief executive officer, Northrop Grumman, presented the Space Camp participants with their official “Space Packs” in Canberra last week.

The participants will join over 150 Northrop Grumman Foundation-sponsored students and teachers to take part in the week-long program starting July 7.

Space Camp provides students with real-world opportunities to apply their skills and knowledge in STEM, and their interest in

“2018 is the 10th year the Northrop Grumman Foundation has sponsored the Space Camp program.”

space, in a series of interactive exercises. Students will have the chance to build and launch rockets, use astronaut-training equipment and conduct a simulated space shuttle mission. Teachers attending Space Camp take part in the Space Academy for Educators, a program that provides them with the tools to enhance how they present STEM concepts in their classrooms.

2018 is the 10th year the Northrop Grumman Foundation has sponsored the Space Camp program.

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1. [BAE Systems Australia wins Future Frigates under Sea 5000](#)
2. [Australia confirms Triton purchase](#)
3. [Butterworth base upgrade and Malaysian relationship expanded](#)
4. [Leonardo and Rafael to provide Trophy to US Army Abrams tanks](#)
5. [AECOM to construct US FPI facilities](#)

ASC plays host to Robot Rumble for STEM students

More than 80 local students put their robots through their paces at the inaugural ASC Robot Rumble last week, with ASC graduate engineers and experts teaming up with the school students to impart their knowledge and experience in a day of Robotics, submarines and networking.

Students and their families also saw state-of-the-art technology on a much larger scale during their visit when they toured ASC North to view Australian submarines HMAS *Collins*, currently alongside the wharf, and HMAS *Waller* commencing deep maintenance by ASC.

Each robotics team recently participated in [FIRST Power Up competition](#) in Sydney, following a six-week period to design and build a robot for the national competition.

Coordinated by FIRST Robotics, more than 3,660 teams were involved in this year's global event.

The ASC Robot Rumble involved all three South Australian clubs – Team

RoboRoos (made up of high school students from about 30 different SA schools), Team Pedare (Pedare Christian College) and Team Koalafied (Pembroke School).

“ASC, as a leader in innovation, engineering, skilled trades, understands that great outcomes can be achieved through strong teamwork, networking and a focus on innovation, so we are thrilled to lend a hand,” ASC CEO and managing

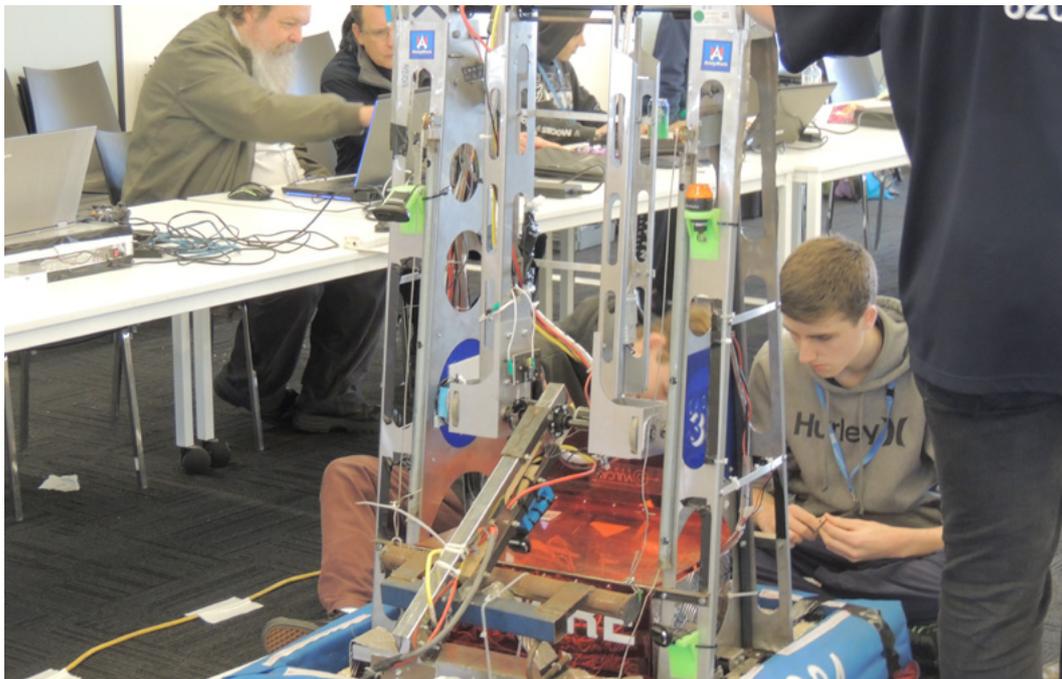
“This is part of ASC’s efforts to encourage young people to study STEM subjects, and ultimately pursue STEM-related careers to grow the talent pipeline.”

director, Stuart Whiley, said. "This is part of ASC's efforts to encourage young people to study STEM subjects, and ultimately pursue STEM-related careers to grow the talent pipeline needed in South Australia to resource the future submarine and future frigate projects.

"A key challenge for all of the local teams has been finding an area large enough to test and practice their robots and opening up our purpose-built shipbuilding facility offers a perfect solution."

As part of its support, ASC has also taken part in a research project with Flinders University to assess the effectiveness of having robots working in confined spaces.

This was featured in an episode of ASC TV and can be viewed [here](#).



Students from three SA schools participated in Robot Rumble, inspiring the next generation of STEM skilled people. © ASC

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Forthcoming Events

ADM EVENTS

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

- [ADM Women in Defence Awards](#) – 27 July 2018
- [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

Defence + Industry Conference and Gala Awards 2018

Date 1-2 August 2018

Location Canberra

Website CASG

The annual CASG and Defence Industry gathering in Canberra to discuss policy and programs with a range of speakers gathering to discuss the way forward. A Gala Awards night will take place on the evening preceding the event, where *ADM's* Essington Lewis Awards will be presented, recognising excellence in collaboration.

BMT's Submarine Design and Engineering course

Location Adelaide

Date 6-10 August

Email trainingcourses@bmttdt.com.au

Register [Here](#)

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

Register 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

Venue Scindicate Labs, Fisherman's Bend, Melbourne

Web <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 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.

ANI Goldrick Seminar

Venue ADFA

Time 17 Sep, 2018

Web <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.

SIA Biennial Conference

Date 7-8 November 2018

Location Canberra Rex Hotel

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.

MilCIS 2018

Date 13-15 November 2018

Location 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 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.