

ADM AUSTRALIAN DEFENCE MAGAZINE DEFENCE WEEK

PREMIUM EDITION

SERVING THE BUSINESS OF DEFENCE



Defence is seeking mature night vision systems for a fast procurement.

DEFENCE

Industry briefed on new night vision under Land 53

Nigel Pittaway | Melbourne

Around 35 registered representatives from industry attended CASG's Land 53 Phase 1BR Tranche 2 (Emerging Night Fighting Technology) briefing in Melbourne on June 19.

Defence is seeking to acquire the latest generation of night fighting equipment under Tranche 2 of the [Land 53 Phase 1BR](#) program and the industry representatives heard details of a tight acquisition timeline, which will require the winner to be on contract by mid-2020.

Land 53 Phase 1 is being delivered in two tranches. Under Tranche 1, L-3 Oceania has been on contract since 2016 for the supply of Binocular Night Vision Devices (BNVDs), Laser Aiming Illumination Devices (LAIDs) and Laser Aiming Illumination and Ranging Devices (LAIRDs).

Tranche 2 began some time ago with the completion of a technology maturity

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assessment by DST and this has now transitioned into the acquisition phase, beginning with an Invitation to Register Interest (ITRI) activity. The future Phase 2 of the Land 53 project will seek a digital solution to night fighting requirements as technologies mature further.

Brigadier David Smith, Director General of CASG's Integrated Soldier Systems Branch, told delegates that, like any other subsection of the ISS program, Phase 1BR Tranche 2 is to be regarded in the context of how it will complement and enhance the overall Integrated Soldier System (ISS) program.

"No decision is taken inside each of the individual sub-programs without thinking about the impact it is likely to have on the other sub-programs within the Soldier Combat System and whether that decision will result in an enhancement to the overall system," he said.

"We are aiming to provide a capability overmatch against potential adversaries. That requires us to take an adaptive view and iterative approach to the business of acquisition"

"We are aiming to provide a capability overmatch against potential adversaries. That requires us to take an adaptive view and iterative approach to the business of acquisition, because our adversaries are constantly adapting. We're about exploiting technologies and we're about partnerships with industry to find out where those technologies might lie and how we can best exploit them with you, to deliver the effect."

The industry representatives were told that the ITRI process has been selected as the preferred method to support the relatively rapid acquisition timeline and it will narrow the field of potential bidders to a smaller number – perhaps just one – with a limited Request for Tender (RFT) to be released later this year.

"This ITRI process is the simplest and most cost-effective way that respondents can notify Defence that it can deliver mature technologies that will supplement, augment or enhance the current Tranche 1 capability," Sarah Bulford, Land 53 Phase 1BR commercial officer, said.

The closing date for ITRI submissions from potential bidders is July 13, with notification of the outcomes expected in late August, ahead of the limited RFT release.

"It is designed to be a relatively fast procurement (and) developmental systems will not be considered suitable," Jamie Cooke, engineering manager for Land 53/1BR, said.

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5. [The Future Frigate Decision: ASPI](#)



ASPI's conference saw a range of speakers discuss Australia's space strategy.

RETO STOCKLI, ROBERT SIMMON, NASA VIA ASPI

ASPI space conference sees industry space announcements

Katherine Ziesing | Canberra

The [ASPI space conference](#) last week saw industry take the opportunity to announce their own research plans in the space realm.

Nicolas Chamussy, head of Space Systems Airbus, travelled to Australia to announce that Airbus will become a founding member of the proposed SmartSat Cooperative Research Centre (CRC), led by the University of South Australia and Nova Systems.

Airbus' planned seven year commitment of funding will further the CRC's research agenda, particularly its 'Intelligent Satellite Systems', a theme that aligns with Airbus' strategy for building resilient and autonomous space-based systems.

Airbus is also working with the University of New South Wales in Canberra and its spin-off space company Skykraft to develop hyperspectral remote sensing technology. The two organisations have signed a memorandum of understanding to further their collaboration.

In speaking of the partnerships, Nicolas Chamussy outlined the company's long term view.

"We want to "walk the talk" and we are determined to do so. Airbus is proud to partner with local industry on dedicated space projects. It is our intention to work with academia, SMEs and start-ups to develop Australia's space sovereign capability, nurturing and developing areas of strategic priority and leapfrog technologies identified by the ERG panel.

"Airbus could help Australia in concentrating on new disruptive areas while achieving strategic agreements with international industries and space agencies," Chamussy said.

He also outlined how the company has been working with other nations to help grow their own space capabilities, citing the example of Peru where Airbus



Nicolas Chamussy, Head of Space Systems Airbus, Peter Nikoloff, co-founder of Nova Group, and Professor Andy Koronios of UniSA announce the CRC commitment.

AIRBUS

is providing a range of space services but also training local operators in how to best make use of their assets.

The company is also working towards the [OneWeb](#) program that is aiming to provide high-speed internet access to everyone by leveraging a constellation of roughly 900 small low cost satellites. Airbus will be making 15 small satellites a week when the program reaches its peak.

"Mass production and satellites have never been used in the same sentence," Greg Wyler, Founder and Chairman of OneWeb said. "Each satellite used to be handcrafted by hundreds of engineers. Until now. OneWeb is changing things."

PEOPLE ON THE MOVE

Chief Defence Scientist Dr Alex Zelinsky has announced he will be leaving Defence Science and Technology (DST) to take up the appointment of Vice Chancellor of the University of Newcastle. Minister for Defence Industry Christopher Pyne extended his sincerest gratitude and thanks to Dr Zelinsky, who has led DST since March 2012. "During his tenure as Chief Defence Scientist, Dr Zelinsky has overseen the realignment of DST's research priorities to meet future Australian Defence Force requirements with the application of leading edge science and technology," Minister Pyne said. "Under his leadership, DST has established long term bilateral research and development relationships with 11 Australian companies and 33 universities in areas of strategic significance to Defence."



Alex Zelinsky,
DST head



Dotterel's shrouded drone technology (top) has significant stealth potential.

DOTTEREL VIA TWITTER

Start-up industry targets Defence as pace of change increases

Ewen Levick | Sydney

The pace of technological change is increasing exponentially. As Managing Editor Katherine Ziesing observed in the [May edition](#) of *ADM*, each generation of technology improves over the last and speeds up the rate of progress from version to version.

Staying abreast of technological progress was a security priority highlighted in the latest [Defence White Paper](#). Much of that progress is driven by small start-ups seeking to capitalise on the frontier of technology.

“Things are moving so fast now in the areas of AI, machine learning, drones, and cyber that Defence can’t wait for these ideas to mature into large companies”

The financial and commercial challenges of running a start-up, however, can preclude these companies from competing for business with Defence.

ADM recently spoke with Terry Gold, managing director of start-up accelerator Techstars Adelaide, about how the start-up scene is trying to spread into the Defence space.

“Traditionally, I think Defence went out to the world and said we need this, can you provide it?” Gold said. “But things are moving so fast now in the areas of AI and machine learning, drones, and cyber that in my opinion, they can’t wait for these ideas to mature into large companies.”

Now, according to Gold, start-ups are approaching Defence and saying “we can provide this – do you need it?”

It is difficult, however, to make a technology commercially viable if it is only marketable to the military. Techstars addresses this by identifying start-ups with dual-use capability and nurturing them through the first stages of opening a business.

“Doing a start-up is really hard, especially if you’ve never done one before,” Gold said. “It’s crucial to have that dual-use capability.”

Techstars Adelaide alumni Shaun Edlin, COO of NZ’s Dotterel Technologies, also told *ADM* about the challenges of building a start-up and bringing new technologies into the Defence space.

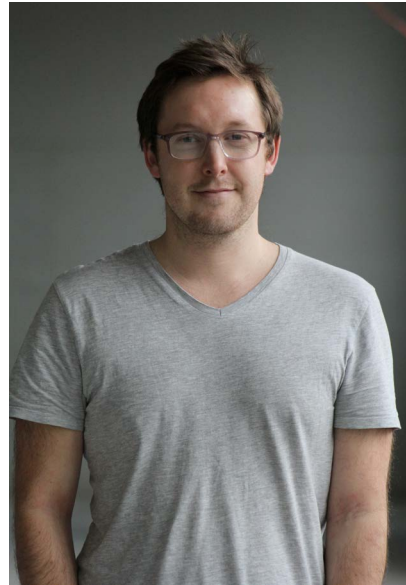
Dotterel develops technology to quieten drones and allow airborne audio recording through the use of lightweight acoustic shrouds and low-noise repellents.

According to Edlin, the company got started through local competitions and went from there.

“We came runner-up in an innovation competition,” Edlin said. “That got us into a tradeshow in Las Vegas, the largest screen industry tradeshow in the world. We won the most innovative product award. That gave us the market validation we needed to take this on full-time.”

“We then raised pre-seed capital and were starting to form earliest commercial partnerships,” Edlin said. “And one of the things that was happening was that we had strong outreach from Defence.”

Dotterel clearly needed a Defence-specific strategy, but the limited number of employees made Shaun hesitant about committing weeks of his time to an accelerator.



Shaun Edlin, COO of NZ's Dotterel Technologies.
SHAUN EDLIN/DOTTEREL

TOP COMMENTS

The real difference between the FREMM and the T26 is the maturity of the design, which plays both ways. An old design maybe be safer but it is also older.

-Johnno

After the Navy implements a number of design changes, will it still be an 'older design'?

-Geoff

The age of a design is not really relevant. An old design that works is always better than a new design that doesn't. There are plenty of things around that have not changed in 100 years because we are yet to design something better.

-DJ

It depends on the extent of the changes. RAN wants a thorough rework of the ships' payloads from two decks up, but limited structural change below the superstructure. The guts of the Australian FREMM will still be the Italian FREMM.

-Johnno

"It would take a lot of the team away from a strict focus on product development," Edlin said. "It felt like a distraction."

"But it didn't turn out to be a problem – a number of companies in the program were in the same boat. People just got very effective at making sure development was on track, then spending the day focused on Defence strategy and working with industry figures. The value showed itself quickly.

"Techstars really opened doors to people we never would've been able to get in front of in Defence."

The comparatively slow speed of Defence decision-making, however, still poses a challenge – raising the question of whether Defence's approach to engaging start-ups is sufficiently adapted to the increasingly fast pace of technological

change.

"We've got to a stage where we focus more on the commercial opportunities and letting Defence run its course at its own pace," Edlin said. "Still giving it focus, but knowing you're playing the long game."

When asked what advice he'd give to new start-ups looking at targeting the

sector, Edlin pointed at the importance of dual-use technology.

"Make sure that your tech has a commercial application. That will create a profile for your company in a meaningful way and early revenue that will smooth your entry into the Defence sector."

"The other thing is to have someone with direct interface with Defence. They'll be your champion for getting in front of the people that matter."

"Make sure that your tech has a commercial application. That will create a profile for your company and early revenue that will smooth your entry into Defence"

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A Heron UAS takes off from RAAF Base Woomera.

DEFENCE

Germany opts for Heron TP

The German government has leased IAI's Heron TP unmanned aerial system (UAS) pending budget approval in the latest chapter of the competition between General Atomics (GA) and Israeli Aerospace Industries (IAI).

Last month, *ADM* [reported](#) that the UK chose to buy GA's Protector drone, a variant of the famous MQ-9 Reaper.

In the latest development, Airbus and the Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support (BAAINBw) signed an operator agreement for Heron TP UAS after receiving parliamentary approval.

The \$600 million contract includes both the provision of Herons as well as all operational services required for the systems. In accordance with German law, the contract will become effective upon publication of the federal budget.

Heron 1 drones, which are currently deployed by the German Armed Forces in Afghanistan and Mali, are to be replaced with IAI's latest Heron model.

The project will have a two-year set-up phase, followed by a seven-year operational phase. The UAS is intended to bridge the gap until a sovereign European drone is developed.

"This project will provide the Bundeswehr with an even more efficient system that will better protect soldiers in a wide range of threat situations as well as the at-risk civilian population," Jana Rosenmann, head of UAS at Airbus, said. "The modular concept will allow us to provide the Bundeswehr with the capabilities it needs on time for the years to come."

"We are thrilled and proud of this agreement with the Federal Ministry of Defence, a major strategic customer," Shaul Shahar, IAI EVP, said.

The Bundeswehr will receive five weapon-capable aircraft, four sets of ground segments, training environments and all system operational services. The basic contract also includes preparing the drones for their use in future countries of operation.

The systems are equipped with electro-optic and infrared sensors and imaging radar systems to perform reconnaissance tasks. Satellite communication systems and German data and voice encryption systems are also part of the configuration.

The UAVs are also kitted out with a weather radar system so that they can operate in bad weather conditions.

Both the Reaper and Heron TP UAS are competing for Australia's [Air 7003](#) program, which will provide RAAF with a medium-altitude long-endurance UAS as well as ground control stations.

The RAAF operated the Heron 1 (which was also used by Germany) in Afghanistan before [retiring the platform](#) in 2017.

"The Bundeswehr will receive five weapon-capable aircraft, four sets of ground segments, training environments and all system operational services"

Australian tech revolutionises satellite tracking

Lockheed Martin and Curtin University are applying technology previously used to observe meteorite fireballs to track satellites.

At a fraction of the cost of current technologies, the system has the potential to radically disrupt the way space objects in orbit will be tracked, according to Lockheed Martin.

The FireOPAL project uses a range of sensors to track satellites and space debris which will ultimately provide a persistent view of objects in orbit around the Earth. It will also provide an early warning system of potential problems affecting satellites and their interaction with the thousands of pieces of space debris. The system is an adaptation of Curtin University's Desert Fireball Network meteorite tracking capability.

Rod Drury, managing director Australia and New Zealand for Lockheed Martin Space, said FireOPAL is an entirely Australian innovation that is set to be expanded around the world.

"This technology enables us to track objects in space in a way that hasn't been done before," Drury said. "We are trialling more space situational awareness sensors and new capabilities to assess what is possible and explore the advantages and challenges of combining data from different sensors."

"FireOPAL is a great example of how blue-sky space science projects can



The FireOPAL project has used an adaptation of Curtin University's Desert Fireball Network to track satellites and space debris.

CURTIN UNIVERSITY

rapidly translate into real benefits for Australian space industries and defence,” Professor Phil Bland, leader of the Desert Fireball Network at Curtin University, said. “FireOPAL has the potential to be a disruptive technology in space situational awareness. We’re looking forward to exploring that potential with Lockheed Martin.”

The joint research and development partnership between Lockheed Martin Space and Curtin University was first announced at the 68th International Astronautical Congress in September 2017.

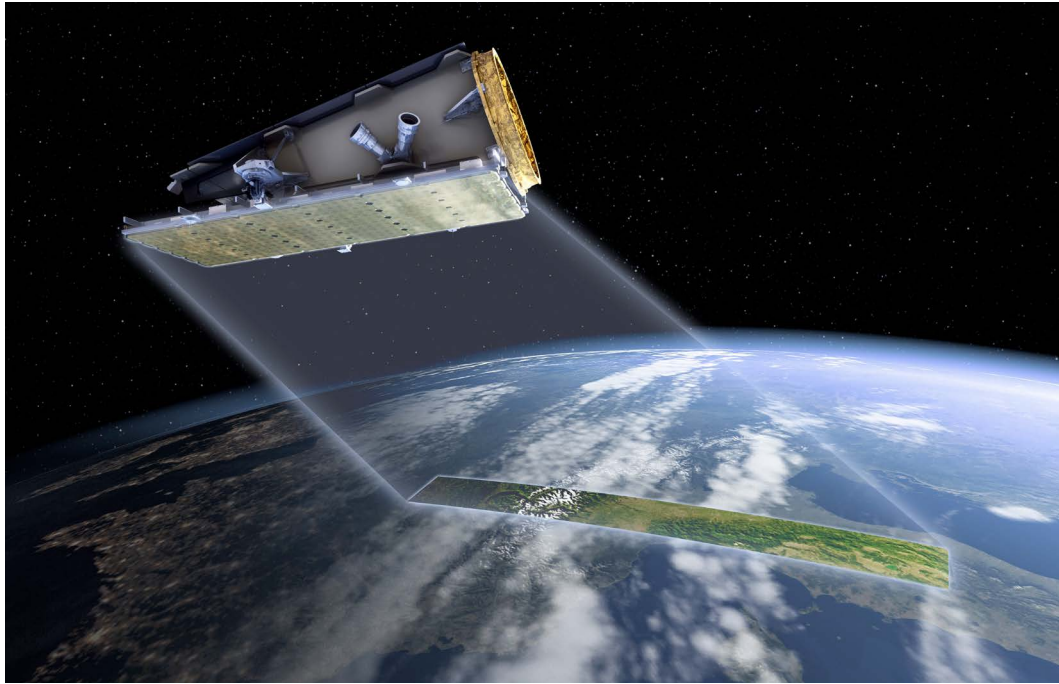
CSIRO announces new space research centre

CSIRO has announced a new research centre focused on collecting and analysing data about Earth from space.

The CSIRO Centre for Earth Observation will help Australian researchers maximise the benefits of observing Earth from space and further develop Australia’s space sector, which is estimated to be worth over \$3 billion per year.

The Centre will coordinate a range of Earth-observing activities within CSIRO and also be a catalyst for engagement with Australian businesses, other government agencies and research organisations.

Data about Earth, collected by satellites orbiting the planet, is critical for environmental management, weather forecasting and monitoring natural disasters, and in commercial applications such as precision agriculture and transport logistics.



The NovaSAR satellite will provide CSIRO and the wider Australian research community with access to an advanced form of radar technology known as S-band SAR.

CSIRO

According to Dr Dave Williams, executive director for CSIRO Digital, National Facilities and Collections, CSIRO is recognised globally as an expert in Earth observation from space, particularly in data modelling, analytics and applications.

"The development of new products and services based on satellite-derived data presents a growth opportunity for Australia's space sector," Dr Williams said.

"Our new CSIRO Centre for Earth Observation will be an open door for governments and businesses to access the wealth of CSIRO's expertise as well as those of our partners."

"Our new CSIRO Centre for Earth Observation will be an open door for governments and businesses to access the wealth of CSIRO's expertise"

"Our goal is to provide technical support to the Australian space sector, and help streamline research and the operation of projects through advances in remote sensing technologies," Centre Director Dr Alex Held said.

The Centre has already signed its first agreements, including one on satellite calibration and validation with CSIRO's partner, Geoscience

Australia, for the Digital Earth Australia program.

This project will further improve the accuracy of satellite-derived data and be an important Australian contribution to international satellite missions.

The Centre will also support Earth observation science across CSIRO, represent Australia on bodies such as the International Committee on Earth Observation Satellites (CEOS), conduct research into new satellite and sensor technologies, and manage Australia's access to state-of-the-art satellite facilities such as NovaSAR, which is due for launch later this year.

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

ASDEFCON TD/IP Roadshow

Location Sydney, Melbourne, Newcastle, Cairns, Brisbane, Adelaide, Perth, Darwin

Date 2 May – 5 July 2018

Register procurement.ASDEFCON@defence.gov.au

Following the official launch of the new ASDEFCON Technical Data/ Intellectual Property (TD/IP) framework on 11 April, roadshows have been scheduled around the country from May to July 2018. The roadshow is open for both Defence and industry personnel to attend. Each roadshow will comprise a general overview of the new framework and interactive sessions.

IFRS Next

Location Canberra

Date 28 June 2018

Register <https://www.regionalsecurity.org.au/event-2861870>

Future strategic leaders will deliver six-minute presentations about a topic they're passionate about and they also feel is of importance to Australia's national security. Expect innovative thinking and insights, even some controversy. It runs for one hour in the arthouse-style setting of Palace Electric Theatre, and is followed by a networking event. It is your chance to engage in conversation with Australia's future security leaders.

Defence + Industry Conference and Gala Awards 2018

Date 1 August 2018

Location Canberra

Website [CASG](http://casg.gov.au)

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.

Project and program management symposium

Date 14-15 August

Location UNSW @ ADFA, 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.