



“Australian engineers and tradesmen are no more expensive than they would be in Germany and we would achieve the same levels of productivity that are achieved in Kiel with the same techniques and production systems. TKMS has huge experience in transferring its submarine design and production techniques to other countries.”

Dr White said TKMS would prefer to partner with ASC, whether privatised or retained in government ownership, and utilise what facilities would be available there without upsetting Collins class sustainment. It would however be happy to build new facilities if required, as had been done for Collins class construction.

A small team of TKMS executives last week visited engineering companies in several states to ascertain their ability, if required, to be part of a distributed production program.

## Contract signature announcement for Land 40 Ph 2 imminent

Katherine Ziesing | Canberra



**ADM understands that an announcement on contract signature for Land 40 Phase 2 is imminent. Specialist firearms, weapons systems, ammunition distributor NIOA is understood to have won the contract, offering the General Dynamics MK47 40mm Automatic Grenade Launcher.**

Under Land 40 Phase 2, the **DMO** are to deliver two new direct fire support weapons to the Army's infantry battalions and special operations forces, and to the Royal Australian Air Force's Airfield Defence Guards. The first, the Medium Direct Fire Support Weapon (MDFSW), has already been selected and fielded, with the **M3 Carl Gustav 84mm recoilless rifle** replacing the **M2 variant** previously in service. The second system, slated to be a "Light Weight Automatic Grenade Launcher (LWAGL) fitted with a

night sight and a fire control system has seen years of controversy.

The original tender closed in October 2007 and no systems have been introduced to date. Two contending systems were shortlisted for trials in 2008. The first pairs the **Heckler & Koch Grenade Machine Gun (GMG E)** with the **Vingmate Fire Control System (FCS)** and **Softmount Combi** from **Vinghøg AS** of Norway (now part of **Rheinmetall Defence**), and two different 40x53mm **Air Burst Munitions (ABM)** from Rheinmetall Defence.

The second contender is the **General Dynamics Armament and Technical Products (GDATP) MK47 Mod 0 system** (also known as the **Striker 40**), outfitted with the **AN/PVG-1 Lightweight Video Sight (LVS)** developed by **Raytheon** and optimised for the **MK285 Programmable Pre-fragmented High Explosive (PPHE)** 40x53mm round, developed by **Nammo AS** of Norway.

As *ADM* reported in July 2010, it was an open secret that the winning bidder was Melbourne-based **Point Trading**, who originally offered the HK GMG E with Vingmate FCS pairing. The Commonwealth later overturned this decision, as the two parties could

not reach a satisfactory agreement during contract negotiations. *ADM* understands that legal action was a part of the proceedings and all parties have expressed their frustration with the project to date.

Given the chequered past of the program and its management as a **Project of Concern**, an announcement on a contract signature with deliveries expected within 12 months is a very welcome surprise.

## Aerial surveillance on Pacific Patrol Boats?

Philip Smart | Adelaide



**With the Australian government now committed to replacing 21 Pacific Patrol Boats for 12 Pacific nations as part of Sea 3036-1, the question of how best to provide those boats with aerial surveillance may follow close on the project's heels.**

Sea 3036-1 will replace the Pacific Class 31-metre patrol boats gifted to 12 Pacific nations as part the Australian Government's Pacific Patrol Boat Program from 1987 to 1997. This time around the vessels are expected to be around 40 metres long, with better seakeeping qualities and longer endurance.

The program has helped these nations police their waters and deter foreign fishing vessels, but the presence of capable seagoing vessels has also led to their use for a myriad of tasks, including search and rescue, disaster relief, hydrographic survey and even transport of voting boxes in national elections.

Maritime surveillance doctrine the world over employs long-legged aerial surveillance platforms to act as forward air control for surface vessels. Aircraft with maritime search radar and electro-optical equipment can cover a much greater area than the vessel alone at less cost, filtering contacts worthy of closer investigation and then vectoring the surface vessel to stop and search as needed.

An aircraft can more easily shadow a suspect vessel, staying outside visual and aural range while observing through electronic means. And regular overflights can build a vital "pattern of life" background picture, indicating, for example, where groups of fishing boats could be expected to be found at various times and making it easier to spot a later "odd one out" vessel.

Together these tasks provide the "credible, evident but unpredictable threat" needed to deter illegal fishing and other nefarious activities.

Civil maritime surveillance differs from its military cousin in that the end goal is evidence that can be used in court to secure a conviction. Seeing a foreign fishing vessel in your nation's waters is not evidence of illegal activity. Proving illegal fishing means photographing evidence, such as baited hooks on a fishing vessel's deck, or evidence of a recent catch.

Australia, NZ and the US have all provided ad hoc or project-related military aircraft for aerial surveillance in the Pacific Islands. Through **Operation Solania**, Australia is committed to providing four Royal Australian **P-3 Orion** deployments per year. **Operation Kuru Kuru**, an intense Exclusive Economic Zone surveillance program conducted periodically, has included P-3 Orions from Australia and NZ, **Guardian aircraft from France** and **C-130 Hercules from the US**.



The 2014 exercise saw aircraft and surface vessels cover more than 30 million square kilometres of sea, with 114 vessels boarded and 12 believed to be in potential breach of licence conditions.

In a 2011, **Australian Strategic Policy Institute (ASPI) Strategic Insights report**, ASPI's Sam Bateman and Anthony Bergan suggested an extension of Australia's **Border Protection Command** model, which sees civil contracted aircraft controlled by Border Protection Command, may provide a solution with a greater local presence and help build the local knowledge that helps spot an anomaly.

"Australia, France, NZ and the US make some contribution using military or coast guard aircraft, but there's a need also for a dedicated capability responsive to regional requirements on a regular basis," the report stated. "The feasibility of such a system was confirmed in 2008 in a trial using a **Reims Cessna F406** twin turboprop aircraft fitted with a range of surveillance equipment."

## Land 19 Ph 7B RFI released

The program office for Land 19 Phase 7B has released an RFI to industry. The Land 19 Phase 7B project is seeking enhancements to, or replacement of, the Ground Based Air Defence capability.

It will build upon the extant GBAMD 'Sense and Warn' (S&W) Force Protection capability procured under Land 19 Phase 7A. It will absorb the Phase 7A Counter-Rockets, Artillery and Mortar (RAM) 'S&W' functionality into a GBAMD Force Protection capability that will be able to sense, manage and mitigate threat weapon and sensor effects.

Defence envisages that the solution to Land 19 Phase 7B will consist of:

- a sensor suite (may include multiple, different types of sensors)
- an effector suite (may include multiple, different types of effectors)
- a Command, Control, Communications, Computing and Intelligence (C4I) system that links sensors, effectors and integrates with the broader ADO

The GBAMD sensor and effectors will be managed by a C4I system that will be capable of operating autonomously and/or within a joint/coalition air and missile defence network. This capability will provide greater fidelity in joint and coalition airspace and contribute to ADO airspace management and air/land integration.

The indicative date for release of an RFT, subject to approval is last quarter 2016. ►►►



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# Fusing simulation and games at SimTect

Philip Smart | Adelaide



2014 Serious Games Showcase winner Carolyn Mees developed a game that detects a range of hearing problems in young children as they play.

At Australia's largest computer simulation conference this August, Australasian game developers and students will have a chance to show how their game-related ideas could also solve problems for Defence.

**Simulation Australasia**, organisers of the annual Adelaide **SimTect** simulation event, have partnered with the **International Serious Games Showcase and Challenge** to encourage developers to present an idea or product, with the drawcards of displaying their interactive systems in front of potential customers, and possibly winning automatic entry to

the finals of the **International Serious Games Showcase and Challenge Competition**, to be held in Orlando, Florida, in December.

To be dubbed a **Serious Game**, a game must use gaming attributes to overcome a designated problem or deficiency, ideally one identified by an independent source. Although serious games can be entertaining, their main purpose is to inform, train or educate. The games are judged by a panel on criteria including the solution to a stated problem, technical quality, gameplay and innovation.

Past international winners have included games that detect and track military vehicles, train players in cross-cultural competence, detail the steps required for combat casualty care and educate on the tasks and responsibilities of an on-scene emergency services commander.

The 2014 Australian winner, Carolyn Mees, developed "**Sound Scouts**", a game that incorporates advanced scientific principles to detect a range of hearing problems in young children as they play.

"Showcasing Sound Scouts at **SimTect and SimHealth 2014** was a wonderful opportunity to both inspire, and be inspired by, people thinking outside the box to solve problems in an innovative way," Mees said. "Representing Australasia at the International Serious Games Showcase and Challenge is an amazing opportunity to further discover serious games development at a global level."

The Australian Defence Force has investigated game technologies for use in simulation, even buying new technologies such as the **Oculus Rift Virtual Reality headset** to see how it might be incorporated. Adrian Webb, Manager of **Virtual Worlds, Australian Defence Simulation and Training Centre**, believes the Serious Games Showcase is providing an important function.

"The Serious Games Showcase and Challenge allows us to see the diversity of the Australasian Games and Simulation community, working together to solve real life problems in an entertaining, innovative and informative way," he said.

Entries for the 2015 Challenge close on July 3, with finalists notified by July 27 and invited to showcase their games at the SimTect 2015 conference from August 18 to 20.

## Harris ESM system testing for ADF complete



**Harris Corporation has successfully completed factory acceptance testing of the first two electronic support measures (ESM) systems produced for the Australian government under a \$102 million contract awarded in March 2013.**

Harris will provide its **ES-3701 ESM suite** for the Royal Australian Navy's **Anzac class frigates, Canberra class landing helicopter dock ships** and land stations. The ESM suite will enhance the country's national defence and electronic warfare (EW) capabilities throughout the Pacific and Indian Ocean regions.

The ES-3701 is the ideal ESM system for submarines and surface ships and is widely deployed with allies around the world. Employing a circular array interferometer antenna, it provides precise direction finding over a 360-degree azimuth and at high elevation, while maintaining the highest probability of interception. Through digital technology and modern signal processing, the system intercepts, measures and identifies complex signals in dense radio frequency environments, even in the presence of interfering signals.

## New FMS for ADF missiles

**The US State Department has made a determination approving a possible Foreign Military Sale (FMS) to Australia for AGM-88B High Speed Anti-Radiation Missiles and associated equipment, parts and logistical support for an estimated cost of US\$69 million.**



**The Defense Security Cooperation Agency (DSCA)** delivered the required certification notifying Congress of this possible sale on June 19, 2015.

The Government of Australia has requested possible sale of up to 14 AGM-88B High Speed Anti-Radiation Missiles (HARM) Tactical Missiles, 16 AGM-88E Advanced Anti-Radiation Guided Missiles (AARGM) Tactical Missiles, four CATM-88B Captive Air Training Missiles, eight CATM-88E Advanced Anti-Radiation Guided Missiles (AARGM) Captive Air Training Missiles, six AARGM Guidance Sections, five AARGM ▶▶▶

Control Sections, and two AARGM Tactical Telemetry Missiles (for live fire testing), containers, spares and repair parts, support equipment, publications and technical documentation, personnel training and training equipment, US Government and contractor engineering, technical, and logistics support services, and other elements of logistics and program support.

The principal contractor will be **Orbital ATK Defense Electronics Systems** in Northridge, California. There are no known offset agreements proposed in connection with this potential sale. Implementation of this proposed sale will not require the assignment of contractor representatives to Australia.

And as always, the standard DSCA disclaimer applies; This notice of a potential sale is required by law and does not mean the sale has been concluded.

The AGM-88 High-speed Anti-Radiation Missile (HARM) is a tactical, air-to-surface missile designed to home in on electronic transmissions coming from surface-to-air radar systems. It was originally developed by **Texas Instruments** as a replacement for the **AGM-45 Shrike** and **AGM-78 Standard ARM system**. Production was later taken over by **Raytheon** when it purchased the defence production business of Texas Instruments.

The AARGM family can be integrated on the **FA-18 C/D, FA-18 E/F, EA-18 G,** and **Tornado ECR** aircraft. It is also compatible with the **F-35, EA-6B, and F-16** aircraft.

## Submarine propulsion and power system test facility for ASC

ASC Wavelengths newsletter | Adelaide



**ASC has demonstrated its high-end engineering and trades skills in the design, build and operation of the innovative diesel and generator test facility at its submarine maintenance facility in South Australia.**

The new facility allows this key part of the submarine propulsion and power system to be operated and proven off the boat.

As part of the preparation for ASC to deliver a two-year maintenance overhaul on HMAS *Farncomb*, a decision was taken to cut the submarine hull and remove the diesels and generators for workshop-based overhaul. This decision has improved work efficiency and reduced the duration of the maintenance period.

To support successful overhaul and reinstallation, a decision was taken at the end of 2013 to design and build a dedicated diesel and generator test facility at ASC North.

Twelve months later, the new facility was commissioned and the first diesel and generator set was tested prior to the end of 2014. The second and third sets were successfully tested in January and February of this year.

The team used the facility to discover and fix issues on the second and third diesel and generator sets. Without the ability to test in the new facility, these issues would have been significantly more difficult and time consuming to find and address once the submarine was in the water at the end of her Full Cycle Docking.



ASC's Business Improvement and Transformation Manager, Tim Hosking, is excited about the new facility and what it means for performance levels at ASC.

"The design, build and use of the test facility is a great example of what can be achieved when our talents across ASC are focused to improve the maintenance and schedule outcome for our customer. Given the size and complexity of this program, to successfully complete concept agreement, design, build and testing in only 14 months is a testament to the teamwork, innovation and determination of everyone involved," Tim said.



## Raytheon awarded P-8A radar contract

**The US Navy has awarded Raytheon a multi-year contract valued at US\$153 million to produce 53 maritime, littoral and overland surveillance radars for its fleet of Boeing P-8A Poseidon aircraft.**

The **AN/APY-10** delivers accurate and actionable information in all weather, day and night, for anti-submarine and anti-surface warfare, and for intelligence, surveillance and reconnaissance missions. It offers a dedicated periscope detection mode, long-range detection and classification of maritime targets, and synthetic aperture for overland surveillance.

"The AN/APY-10 is a product of our nearly five decades of experience in developing and delivering innovative maritime and overland surveillance radars," Jerry Powlen, vice president of Intelligence, Surveillance and Reconnaissance Systems for Raytheon's Space and Airborne Systems business, said.

To date, Raytheon has delivered 36 of 58 AN/APY-10 radars previously ordered by the US Navy and is now under contract to produce 53 additional systems for the Navy's P-8A fleet and the **Royal Australian Air Force**.

### MOST READ ONLINE THIS WEEK

[www.australiandefence.com.au](http://www.australiandefence.com.au)

1. BMT and DSTO to investigate submarine systems
2. Formula 1 technology speeds armoured vehicles
3. Cobham to support Reaper UAS in UK, Australia
4. Australian shipbuilding industry needs to evolve
5. Lockheed Martin wins Air 5428



# FORTHCOMING EVENTS

For a full list of defence and industry events, head to ADM's online events page at [www.australiandefence.com.au](http://www.australiandefence.com.au)

## SimTecT 2015 Interfaces and Potentialities

**DATE:** 17-21 August 2015, Adelaide Convention Centre  
**ENQUIRIES:** Simulation Australasia  
**TEL:** 08 8223 4888  
**EMAIL:** [admin@simulationaustralia.org.au](mailto:admin@simulationaustralia.org.au)  
**WEB:** [www.simtect.com.au](http://www.simtect.com.au)

ADM WILL  
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ATTENDANCE

2015 will be SimTecT's 20th Anniversary, marking two decades of showcasing the best modelling and simulation technologies, methodologies and research across Australasia. Comprising an exciting cross disciplinary gathering of industries, users, developers, decision makers and researchers, SimTecT provides a unique platform to connect with the simulation community and keep abreast of the latest national, and international developments.

## ADM Defence Estate and Base Services Summit Enhancing innovation in defence service delivery

**DATE:** 22 September 2015, Canberra  
**ENQUIRIES:** ADM Events – Adam Wiltshire  
**TEL:** 02 9080 4321  
**EMAIL:** [adam.wiltshire@informa.com.au](mailto:adam.wiltshire@informa.com.au)  
**WEB:** [www.admevents.com.au](http://www.admevents.com.au)

ADM WILL  
BE IN  
ATTENDANCE

Faced with the biggest reform for 40 years, budget cuts and organisational change, Defence is presented with a new paradigm – how to effectively innovate and deliver value for money services to support our armed forces in the wake of a changing fiscal and operating environment.

Effective partnering between defence and industry will continue to be critical to fostering a culture of innovation, constructive reforms and the achievement of mutually beneficial outcomes in the provision of defence support services.

ADM Defence Estate and Base Services Summit will have a theme and focus on 'Enhancing innovation in defence service delivery' and will examine the 2015 White Paper, the First Principles Review and what this means, current & future reforms, total asset management, BIM in defence and non-materiel procurement. ▶▶▶

To list an event in the magazine or online at [www.australiandefence.com.au](http://www.australiandefence.com.au) please call or email Katherine Ziesing on 02 6203 9535 or [katherineziesing@yaffa.com.au](mailto:katherineziesing@yaffa.com.au)

## Safeskies 2015 Conference

**LOCATION:** Canberra, ACT  
**VENUE:** Hotel Realm  
**DATE:** 23 Sep – 24 Sep, 2015  
**ORGANISER:** Safeskies  
**PHONE:** 02 6281 6624  
**EMAIL:** [safeskiesconference@conlog.com.au](mailto:safeskiesconference@conlog.com.au)  
**WEB:** <http://www.safeskiesconference.com.au>

The Safeskies Conference is regarded as one of the most pre-eminent aviation conferences in Australasia and globally by the aviation safety industry as an outstanding and highly informative event. Safeskies Australia Conference was presented the Federation Aeronautique Internationale prestigious aviation award, the Honorary Group Diploma for Aeronautics in 2010. The Safeskies Conference facilitates the exchange of information and ideas between regulators, investigators, governments, civil and military aviation operators and academia. Safeskies 2015 continues the tradition of providing delegates with an outstanding array of national and international speakers, all authorities in their field of expertise.

## PACIFIC 2015

**DATE:** 6-8 October 2015, Sydney  
**WEB:** [www.pacific2015.com.au](http://www.pacific2015.com.au)

The PACIFIC2015 International Maritime and Naval Exposition is a unique marketing, promotional and networking forum. Scheduled to coincide with the Royal Australian Navy's annual Navy Week celebrations, PACIFIC2015 will be a comprehensive showcase of the latest developments in naval, underwater and commercial maritime technology.

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## Northern Australia Defence Summit

**DATE:** 28-29 October 2015, Darwin  
**ENQUIRIES:** ADM Events – Adam Wiltshire  
**TEL:** 02 9080 4321  
**EMAIL:** [adam.wiltshire@informa.com.au](mailto:adam.wiltshire@informa.com.au)  
**WEB:** [www.admevents.com.au](http://www.admevents.com.au)

As Northern Australia continues to establish itself as a key military and strategic region for the ADF and its partners, further investment is needed to support the multitude of major defence projects and the necessary infrastructure required for their operation. The north has proven to be an attractive and resourceful location for defence/industry with close links to the Asia Pacific, a strong economy, existing military presence & capabilities, and accessible land which together provide many opportunities for growth and development in the region. We are currently in the process of developing the 3rd Annual Northern Australia Defence Summit program. If you are interested in getting involved, please contact us. ▶▶▶

ADM WILL  
BE IN  
ATTENDANCE

## MilCIS 2015



**DATE:** 10-12 November 2015, Canberra

**WEB:** [www.milcis.com.au](http://www.milcis.com.au)

MilCIS is a unique opportunity for those investing in government and military communications and information systems.

In November each year, the Defence Chief Information Officer Group (CIOG) partners with the University of New South Wales, Canberra and the Institute of Electronic and Electrical Engineers (IEEE) to present MilCIS. The conference facilitates a continuing dialogue between Department of Defence employees, contractors, industry and researchers to discuss current and developing technological capabilities, project initiatives, and operational requirements.

In addition to keynote presentations, technical presentations, panel discussions and tutorials, MilCIS features an exposition that provides an opportunity for exhibitors to demonstrate new technologies and promote their products and services to attendees.

MilCIS is the only Australian conference that focuses strategically on the crucial technologies, products, systems and services associated with military communications and information systems.

## New Zealand Defence Industry Association Forum

**DATE:** 17 – 18 November 2015

**LOCATION:** TSB Arena/Shed 6 complex, Wellington, New Zealand

**CONTACT:** [contact@nzdia.co.nz](mailto:contact@nzdia.co.nz)

Attending will be senior representatives from New Zealand and Australian Governments, NZDF, ADF, MoD, DMO and international and domestic Defence industry businesses.

Plan now to attend this signature event focussing on Defence and Security markets in New Zealand and Australia.

Trade display and sponsorship options available.

## Submarine Institute of Australia Technology Conference

**DATE:** 17-19 November, 2015

**LOCATION:** Adelaide Convention Centre

**CONTACT:** Mr David Nicholls (Executive Manager)

**PHONE:** +61 413 133 391

**FAX:** +61 2 8076 3262

**POSTAL:** Submarine Institute of Australia, PO Box 180, Kippax ACT 2615

Over three days a wide range of issues will be addressed reflecting the theme of the Conference: The Future Submarine: Australia's greatest Science, Technology and Engineering Challenge? In a year where the Government has promised to select its design partner for the Future Submarine, the Conference acts as a pivotal week in the submarine calendar. The program includes tours of submarine-related industry and academic institutions, an Opening Reception and three days of high quality presentations from the cream of the submarine community.

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