

PREMIUM EDITION

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Supacat selected as preferred bidder for Redfin

The Defence Materiel Organisation has finally announced that it has selected Supacat as preferred bidder for the Special Operations Vehicle element of the Project Definition and Evaluation phase of JP2097 Ph 1B (REDFIN) program and has awarded Supacat an initial contract for this phase.

Supacat offered the latest version of its Special Forces HMT Extenda vehicle. When approved, JP2097 Ph 1B (REDFIN) will provide the Australian Defence Force with a new family of Special Operations Vehicles. On completion of the PD&E phase the DMO is expected to acquire a fleet of vehicles under a separate contract.

The new vehicle, while retaining a high level of commonality with the Australian Army's existing 'Nary' HMT fleet, delivered by Supacat in 2009, provides improved capabilities, particularly, in the areas of crew protection and vehicle versatility. Supacat will deliver the program through the Supacat Team Australia program office based in Melbourne. Supacat Team Australia is made up of 14 Australian industry partners who will provide the capabilities to deliver the production vehicles and the ongoing through life support of the fleet.

Mick Halloran, managing director, Supacat Pty Ltd, said, "Being selected for this key Australian program is a huge achievement for Supacat. We are looking forward to working with the Commonwealth, their preferred prime systems integrator for the command and control element, Elbit Systems of Australia, and our Supacat Team Australia partners to successfully deliver this first phase of REDFIN 1B. It is the launch pad for Supacat Pty in the Australian defence market."

Designed for use by Special Forces, the HMT Extenda is unique in being convertible to either a 4x4 or 6x6 configuration to meet different operational requirements by inserting or removing a self-contained third axle unit. Like other HMT series platforms, the HMT Extenda can be supplied with optional mine blast and ballistic protection kits and with a variety of mission hampers, weapons, communications, ISTAR and force protection equipment to suit a wide range of operational roles.

Supacat's REDFIN 1B solution offers capability improvements in the key areas of firepower, protection, capacity, operability and safety, based upon direct feedback from the worldwide operational use of existing HMT fleets. There are also a number of options offered that the Commonwealth may wish to choose from.

Australia hosts NATO camouflage trial

The Defence Science and Technology Organisation (DSTO) is participating in an international trial in Queensland to test the effectiveness of camouflage uni-

forms in hot and humid conditions, the Minister for Defence Science and Personnel, Warren Snowdon, announced April 13.

The Army Jungle Training Centre in Tully was selected for the North Atlantic Treaty Organization (NATO) camouflage field trial because of its unique geography and natural tropical conditions. Ten volunteers from Army's 3rd Brigade participated in the trial testing trial camouflage suits in a variety of environmental conditions.

"This is a significant activity to be hosted in Australia with participation from Canada, the Czech Republic, Germany, Great Britain, the Netherlands, Sweden and Switzerland," Snowdon said. "The trial will also contribute to the ADF's ongoing program to enhance the protection of Australian soldiers. It will improve our understanding of detection by modern sensors that can 'see' in the ultraviolet, visual, infrared, and radar bands of the electromagnetic spectrum."

Multi-spectral protection has been successfully applied to military vehicles and weapon systems and this trial presents an opportunity to test the same level of protection in the clothing of dismounted soldiers to reduce their chance of detection.

Between 15 and 18 camouflage uniforms, including in-service and experimental clothing items, were tested. DSTO will have access to and share in a significant body of information, collective knowledge, methodologies, systems and reports that NATO members use to assess camouflage uniform effectiveness in multi-spectral wavebands.

"Importantly, the trial will provide valuable data to better inform the ADF Digerworks program in current and future camouflage design concepts and assessment methods," Snowdon said.

NATO researchers are using multi-spectral image recording and panoramic photography techniques to measure the effectiveness of camouflage uniforms in ultraviolet, visual, infrared and thermal spectrum for the hot and humid jungle environment. The post-trial assessment activities will involve a large number of soldiers in several NATO countries and Australia.

USN cruiser superstructure cracking to cost \$270m

Naval Sea Systems Command is telling Congress that superstructure cracking in several classes of surface combatants is being addressed, but is in some cases proving costly.

Cracking problems on the CG-47 Ticonderoga-class cruisers "appears to be the most pervasive as it extends to all ships of the class," according to the March 5 document, "Report to Congress: Surface Combatant Topside Superstructure Cracking," which was recently reviewed by Inside the Navy.

In addition to facing fatigue cracks, "stress corrosion cracking is also pervasive and affects widespread areas of the superstructure." Four of the last five ships in the class also saw higher sensitization - a process that changes the aluminium and makes it more susceptible to corrosion - in a shorter period of time.

According to Australian authorities fatigue-induced cracking of aluminium superstructures remains a serious problem with warships still in service. Cracking is usually caused by a combination of applied cyclic stresses and stress concen-

tration interacting with a region of material weakness. Cracks usually initiate and propagate from areas at or adjacent to butt welds as weldments intrinsically display even lower fatigue endurance than the strain hardened parent plate.

The FFG-7 class of guided missile frigates, of which the Royal Australian Navy now operates four following the decommissioning of the two US-built vessels, and the US Navy more than fifty, has a steel hull to which is continuously welded an aluminium alloy superstructure. All ships of this class have experienced endemic fatigue-induced superstructure cracking, often severe, after just a year or two in active service.

More than 200 cracks have been repaired in the four older RAN vessels, some by welding or use of doubler plates and those on HMAS Sydney with DSTO's bonded composite patch repair.

In regard to the lengthy trial with composite repairs on Sydney it was pointed out that this technology was not meant to replace welding but rather complement the repair of old structures. The DSTO report said that should a bolted or welded doubler plate be recommended to reinforce the structure, then composites should certainly be considered as an option.

More recently a 6-inch crack in the hull of the littoral combat ship USS Freedom caused the ship to abort sea-keeping trials on February 12 and return to its homeport of San Diego for repairs, the US Navy confirmed in March last year.

The crack, about three and a half feet below the waterline in a weld seam between two steel plates in the hull, allowed water to enter a void space in the ship, according to NAVSEA. Flooding was contained, however, and, at a speed of about 8 knots, the vessel sailed about 600 miles to San Diego to begin repairs.

NAVSEA and Lockheed Martin, the ship's prime contractor, are reviewing the ship's design, construction drawings and welding procedures to determine what caused the hull crack. It is not yet clear, NAVSEA said, whether the problem is due to a design flaw or faulty construction techniques—*with Insider/DSTO/Military.com*

Aerosonde SUAS in USN surveillance award

AAI Unmanned Aircraft Systems has announced that it is one of three companies awarded the US Navy's Intelligence, Surveillance and Reconnaissance (ISR) Services multiple-award contract, encompassing both land- and sea-based unmanned aircraft systems operations for the Navy, Marine Corps and Air Force.

The company's winning bid was based on its multi-mission-capable Aerosonde Small Unmanned Aircraft System (SUAS), which incorporates a heavy-fuel engine for reliable performance and mission endurance of up to 16 hours.

It delivers persistent electro-optic/infrared ISR, plus with its large payload size, weight and power, it can accommodate another payload of choice for superior mission flexibility.

Designed specifically for expeditionary land- and sea-based operations, the

Aerosonde system uses an AAI-designed, one-piece Launch and Recovery Trailer for efficient takeoff and landing, as well as an Expeditionary Ground Control Station for portable command and control operations.

Ansell to provide gloves to ADF

Supplier of tactical and utility hand protection products, Ansell, announced that it had been selected as supplier of combat gloves to the Australian Defence Force (ADF).

The company's ActivArmr Mission Critical Gear is designed and engineered to provide optimal protection in extreme environments where teams need reliable gear to help them do their job safely and precisely.

Following a competitive tendering process which included user field trials, the ADF selected the ActivArmr Combat and ActivArmr Combat Extended Cuff gloves for mounted and dismounted combatants. Ansell will provide the ADF with ActivArmr gloves for the next three years, enabling the ADF to protect personnel at home and abroad. Last year both of these ActivArmr glove styles were placed on the US Army Approved Product List and Ansell started supplying the US Army and Marine Corps on multiple contracts. Ansell also supplies the US Navy and US Air Force on several contracts.

ActivArmr Combat and Combat Extended Cuff gloves are comfortable and dextrous, designed and engineered for use in all types of environments and across a wide range of general and soldier-specific tasks.

ADF weapon training contract for Meggitt

Meggitt Training Systems (MTS), makers of FATS simulation technologies, has been awarded a US\$11 million contract from the Australian Defence Force (ADF) for delivery of Weapon Training Simulation Systems (WTSS) at four purpose-built Australian Army facilities.

This brings the total number of WTSS facilities to 25, further reinforcing the long-term relationship between MTS and the ADF.

Meggitt's WTSS is a complete small arms training environment that includes individual training in marksmanship and weapons handling. It is configured for the future adoption of mortar simulators for crew and collective training missions with an integrated capability supporting call for fire and indirect fire tasks.

WTSS includes MTS' latest system architecture designed to deliver new levels of realism in virtual firearms training. The system also enables training developers to use and integrate the latest graphics platforms to best effect.

Ronald Vadas, president of Meggitt Training Systems commented: "These weapon training simulation systems and associated devices are core elements of the ADF's weapons training process and complement its 'train as you fight' philosophy.

We provide unsurpassed fidelity in weapons simulation and ballistic accuracy with superior feedback to trainees and instructors in a controlled environment. This facilitates a documented, seamless transition to 'live' ranges where lessons learned in simulation are applied with greater speed."

National Instruments Robotics competition teams announced

National Instruments Oceania has announced the participating teams for the annual National Instruments Autonomous Robotics Competition, a student robotics competition designed to encourage development and innovation in the field of robotics.

A total of 24 teams will be participating in this year's NI ARC, representing top universities from across Australia and New Zealand. The competition, which commences in April and concludes in September, 2012 will involve each team developing an autonomous robot that will ultimately compete in a live competition with the objective of autonomously completing a set of predefined tasks in the shortest amount of time and earning the most points. The theme for the 2012 NI ARC is 'Search and Rescue'.

"The NI Autonomous Robotics Competition is an exciting initiative which provides engineering students with an excellent platform to develop and showcase their technical and creative skills and capabilities" said Matej Krajnc, managing director for National Instruments Oceania.

"There were some amazing robot designs in the 2011 competition, and with twice as many teams participating this year we are looking forward to a challenging, competitive and highly enjoyable 2012 Competition"

The students, working alongside NI engineers, will get the opportunity to showcase their robotics talents in front of a large audience from industry and academia at the live competition on 21 September 2012.

Teams from the following universities and tertiary institutions will be competing in the 2012 competition:

Auckland University of Technology

University of Canterbury

Curtin University of Technology

Griffith University

Macquarie University

Massey University

University of Newcastle

Queensland University of Technology

Royal Melbourne Institute of Technology

Swinburne University of Technology

NSW Western Sydney Institute of TAFE – Mt Druitt College

The University of South Australia

The University of New South Wales

University of Auckland

University of Tasmania

University of Technology Sydney

Victoria University of Wellington

University of Wollongong

Charles Darwin University

Within the theme of 'Search and Rescue', the robotics application areas of focus will be navigation, obstacle avoidance, and object handling. Participating teams have each received a development kit featuring an NI CompactRIO embedded acquisition and control system and the NI LabVIEW 2011 Robotics Suite for the development of their autonomous robot. Maxon Motor has also provided each team with a gift voucher for purchase of Maxon Motors.

The winning team at the live national competition on 21 September 2012 will receive \$3,000 cash, and the runners up will be awarded \$1,500 courtesy of National Instruments Oceania.

There is also a cash prize for the most aesthetically pleasing robot. Additionally, all teams that successfully complete the tasks in this competition, regardless of their finishing position, will get to keep their development kits valued at over \$26,000.

Training, mentoring, and competition objectives will be provided by NI Application Engineers who specialise in robotics applications.

MRTT breaks RAAF passenger record

The record has been broken for the most people carried on board an RAAF aircraft. On March 12, a KC-30A carried 234 passengers for a two-hour flight from Defence Establishment Fairbairn.

RAAF's previous record holder was a C-130, which held up to 180 pax during a humanitarian flight in 1999 from East Timor.

The record-breaking KC-30A flight carried 220 officer cadets and midshipmen from the Australian Defence Force Academy, along with 14 crew members from 33SQN – the purpose being to give 33SQN the practice it needs when carrying large numbers of passengers on the 270-seat KC-30A.

Crew attendant Sergeant Chris Mayers said the KC-30A had not carried more than a 50 per cent pax load before.

"Catering for 270 passengers on the KC-30A is a major logistic exercise considering the nature of military non-scheduled flying activities," SGT Mayers said.

As well as the food service, crew attendants are responsible for passenger safety – including evacuation within 90 seconds of the full pax load.

"It's a big difference from flying on a Boeing Business Jet which only holds 26 passengers," SGT Mayers said – *Eamon Hamilton, Air Force News*

US test Forward Operating Base missile defence

The US Armed Forces has teamed with Raytheon to begin testing on a new integrated missile system specifically designed to protect Afghan Forward Operating Bases.

Networking the Griffin B Missile with an ISTAR sensor payload, the plan is to provide round-the-clock 360-degree surface to air protection for troops nestled on the frontline through the use of a long endurance surveillance aerostat and ground launchers.

Testing and evaluation occurred at Eglin Air Force Base at which a stationary target at a 4km distant was targeted with global positioning, before being volleyed. The second round of tests is scheduled to be carried out in March.

It is rumoured that the first trials used Lockheed Martin's Persistent Threat Detection System (PTDS), which has been in use by the Army since 2004.

The AGM-175 Griffin B variant was initially designed for use on armed unmanned combat air vehicles, and employs a relatively small warhead of 13lbs and laser designation, that helps to restrict the blast radius. It is currently being integrated on the Hawker Beechcraft AT-6 light attack aircraft.

Advances in FOB security are not limited to US initiatives and Australia has introduced its C-RAM capability for ADF force protection.

However a NATO spokesman says that although NATO has the technology to counter artillery or mortar attacks, the deployment of systems is not as widespread as it needs to be — *Defence IQ.com*

US Coast Guard purchase two more Sentry aircraft

The US Coast Guard has exercised a US\$78.5 million contract option to purchase the service's 16th and 17th HC-144A Ocean Sentry Maritime Patrol Aircraft. The HC-144A is based on the Airbus Military CN235 tactical airlifter, more than 250 of which are currently in operation by 27 countries.

The option is part of a contract awarded in August 2010 for three aircraft, plus options for up to six additional aircraft.

Under this contract, Airbus Military, via prime contractor EADS North America, has already delivered two HC-144As, the 12th and 13th for the service – both on budget and ahead of schedule. The 14th aircraft is due for delivery by July.

The Coast Guard exercised the first option on the contract for the 15th HC-144A in August 2011, with delivery expected in 2013. The 16th and 17th aircraft will be delivered in 2014.

The remaining options left on the contract, for up to three additional aircraft, can be exercised sometime in the next two years. Coast Guard plans call for acquiring a total of 36 HC-144As.

Denmark borrows Dutch UAVs

The Dutch defence ministry has announced it is lending Denmark a number of its unmanned drones.

The Danish army is getting two sets of the Raven UAV (unmanned aerial vehicle) system, each consisting of a ground station and three hand-launched micro-planes.

The whole system can be carried in two rucksacks.

Denmark has been having problems with the supply of spare parts for its reconnaissance drones and all the working units are in use in Afghanistan. This leaves the troops in Denmark with no planes to practice with.

USN's proposed Afloat Forward Staging Base approaching definition

The US Navy is reported to be working on the requirements definition for its Mobile Landing Platform-turned-Afloat Forward-Staging Base, which was mentioned within the Pentagon budget briefing in January.

Development funding will be provided, the document said, for a new AFSB "that can be dedicated to support missions in areas where ground-based access is not available, such as countermine operations.

"Elsewhere, under "industrial base skills," the documents noted that, "for example, adding the afloat forward staging base addresses urgent operational shortfalls and will help sustain the shipbuilding industry in the near-term and mitigate the impact of reducing ship procurement in the budget"

Under a recent decision the amphibious transport dock ship Ponce will be modified into an interim AFSB able to support minesweeping helicopters.

The ship will be operated jointly by active-duty Navy officers and sailors, and by government civilian mariners employed by Military Sealift Command — a hybrid crew similar to those used on the Navy's two submarine tenders and the command ship Mount Whitney.

Beyond the conversion, though, the Navy now plans to build at least one, and possibly two, AFSBs, modifying the original Mobile Landing Platform (MLP) design to take on the AFSB role.

Comment: Presumably Australia's more minimal requirements for forward staging may largely be met by the new LCDs and other amphibious type vessels such as HMAS Choules.

Dual frequency hull-mounted sonar for new DDGs

Raytheon has completed delivery of the electronics for the AN/SQQ-90 tactical sonar suite, the complex sonar for the first ship of the USN's DDG 1000-class multimission destroyer.

The AN/SQQ-90 tactical sonar suite, the first dual-frequency hull-mounted sonar of the Navy's surface fleet, is a major advancement in undersea warfare capability and will provide broad warfighting coverage to DDG 1000.

The sonar electronics were completely assembled and integrated into an Electronic Modular Enclosure (EME), an innovation to 21st century shipbuilding designed into the Zumwalt-class destroyer program for affordability.

The EME delivers benefits not only in upfront integration and testing before delivery to the shipyard for ship installation, but also minimizes the footprint occupied onboard the ship (size and weight) and maximises efficiencies in both power and cooling.

The AN/SQQ-90 comprises the AN/SQS-60 hull-mounted mid-frequency sonar; the AN/SQS-61 hull-mounted high-frequency sonar; and the AN/SQR-20 multi-function towed array sonar and handling system.

Raytheon is the AN/SQQ-90 systems integrator, bringing together the full functionality of the suite's sonar system elements.

Through automation and unique information management, DDG 1000's

AN/SQQ-90 can be operated by one-third the crew of current Aegis platforms —
Raytheon/Defpro.com

Vipers Strike scores multiple direct hits

MBDA Incorporated's GBU-44/E Viper Strike munition scored multiple direct hits from a US Marine Corps KC-130J Harvest HAWK aircraft during developmental testing at Naval Air Warfare Centre's China Lake, California Weapons Station.

Viper Strike is a glide munition capable of precision attack from extended stand-off ranges using GPS-aided navigation and a semi-active laser seeker. Its small size, precision and high agility provides a very low collateral damage weapon that is effective against stationary and moving targets.

Using the new pressurized "derringer door" launcher on Harvest HAWK, Viper Strike successfully launched and scored multiple direct hits on tactical targets.

The new derringer door launcher uses a side door in the fuselage and enables the aircraft to launch and reload Stand Off Precision Guided Munitions while the aircraft remains pressurized. This allows the aircraft to extend standoff ranges while reducing the time to acquire and attack a target, increasing the likelihood of a successful engagement with the Viper Strike.

Viper Strike also proved its new fast attack software load that greatly enhances the weapon's effectiveness against time sensitive targets. Combined with its top-attack mode of operation, the weapon can safely attack targets that are either ground or air-designated. ▲