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- Javelin Joint Venture signs Letter of Intent with Tata Power
- Supacat develops new variants of HMT family to optimise Jackal and Coyote in Core and meet new requirements
- MBDA`s MMP Anti-tank Guided Weapon – next generation capability today
- CV90 Infantry Fighting Vehicle makes Australian debut
- Harris Corporation to Demonstrate Robotic Bomb Disposal Technology at Raven's Challenge in Thailand
- Milrem Targets the UK Market with Its First-of-Its-Kind UGV THeMIS
- Supacat to deliver Special Operations Vehicles – Mobility Heavy (SOV-MH) to New Zealand
- GD Showcases AJAX Progress
- AT Communication is pleased to announce the expansion of its Tactical range of transceivers with the launch of the Sentry-H™ High Frequency (HF) SDR radio

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Defence Industry

Javelin Joint Venture signs Letter of Intent with Tata Power

The Javelin™ Joint Venture team, a partnership between Raytheon Company and Lockheed Martin, signed a letter of intent (LOI) with Tata Power Company Limited operating through its Strategic Engineering Division (SED), to explore co-development and production of the Javelin anti-armour missile system.

"This agreement brings together three world leaders in aerospace and defense technology to extend Javelin to new customers, new applications and new platforms," said John Halvey, Javelin Joint Venture president at Raytheon Missile Systems. "With this deal, we are also reinforcing our continued support of the 'Make in India' initiative."

As part of the LOI, the Javelin Joint Venture (JJV) and Tata Power SED will create a strategy to co-develop and produce the Javelin missile system and integrate platform mounts to meet Indian requirements. This includes ground combat vehicle, dismounted infantry and rotorcraft applications.

"The combat-proven Javelin continues to fulfil a critical precision-strike role with our domestic and international partners," said Rich Benton, Javelin Joint Venture vice president and Javelin program director at Lockheed Martin Missiles and Fire Control. "We look forward to working with Tata Power SED to maximize the versatility and lethality of Javelin on these new platforms."

In addition to meeting the Government of India's "Make in India" objectives, the LOI establishes a framework for future technological cooperation between the Javelin Joint Venture and Tata Power SED.

"Since the early 1980s,Tata Power SED has established its R&D and 'Make in India' credentials, as part of Dr. Kalam's Integrated Guided Missile Development Program," said Rahul Chaudhry, Chief Executive Officer at Tata Power SED. "Now, our partnership with the JJV will bring the world's best technology to our soldiers enabling battlefield supremacy. Indian industry will benefit immensely from the depth and range of this planned technology transfer and co-development."

About Tata Power SED:

The Tata Power Company Limited operating through it' Strategic Engineering Division (Tata Power SED) has been a leading private-sector player in the indigenous Design, Development, Production, Integration, Supply and Life-cycle Support of mission critical Defence Systems of Strategic importance, for close to four decades. During this period, the Division has partnered the Ministry of Defence (MoD), the Armed Forces, DPSUs and DRDO in the development & supply of state-of- the-art Systems and emerged as a Prime Contractor to MoD for Indigenous Defence Production when it secured Orders for Pinaka Multi Barrel Rocket Launcher, Akash Army Launcher and Integrated EW System for the Indian Army and for the Akash Air Force Launcher, COTS-based Automatic Data Handling System for Air Defence and Modernisation of Airfield Infrastructure (MAFI) for the Indian Air Force, Tactical Communication Systems and Battlefield Management Systems. For more information, visit www.TataPowerSED.in.

About Tata Power:

Tata Power is India's largest integrated power company with a growing international presence. The Company together with its subsidiaries and jointly controlled entities has an installed gross generation capacity of 9432 MW and a presence in all the segments of the power sector viz. Fuel Security and Logistics, Generation (thermal, hydro, solar and wind), Transmission, Distribution and Trading. It has successful public-private partnerships in Generation, Transmission and Distribution in India namely "Tata Power Delhi Distribution Limited" with Delhi Vidyut Board for distribution in North Delhi, 'Powerlinks Transmission Ltd.' with Power Grid Corporation of India Ltd. for evacuation of Power from Tala hydro plant in Bhutan to Delhi and 'Maithon Power Ltd.' with Damodar Valley Corporation for a 1050 MW Mega Power Project at Jharkhand. Tata Power is serving more than 2.6 million distribution consumers in India and has developed the country's first 4000 MW Ultra Mega Power Project at Mundra (Gujarat) based on super-critical technology. It is also one of the largest renewable energy players in India with a clean energy portfolio of 1996 MW. Its international presence includes strategic investments in Indonesia through a 30% stake in the leading coal company PT Kaltim Prima Coal (KPC), 26% stake in mines at PT Baramulti Suksessarana Tbk ("BSSR"); in Singapore through Trust Energy Resources to securitize coal supply and the shipping of coal for its thermal power generation operations; in South Africa through a joint venture called 'Cennergi' to develop projects in sub-Sahara Africa; in Zambia through 50:50 joint venture with ZESCO for 120 MW Hydro which has become operational in 2016; in Georgia through AGL which is a joint venture with Clean Energy, Norway & IFC for development of 185 MW hydro project which is scheduled to be commissioned in 2016; in Australia through investments in clean coal technologies and in Bhutan through a hydro project in partnership with The Royal Government of Bhutan. With its track record of technology leadership, project execution excellence, world class safety processes, customer care and driving green initiatives, Tata Power is poised for a multi-fold

growth and committed to 'lighting up lives' for generations to come". Visit us at: www.tatapower.com

About Javelin:

Javelin is a compact, lightweight missile designed for one-soldier operations in all environments. It is made by the Javelin Joint Venture, a partnership between Raytheon Company and Lockheed Martin. Javelin has been adopted by international armed forces around the world. It is currently fielded with the U.S. Army and U.S. Marine Corps, and has also been approved for 15 foreign military sales customers.

About Lockheed Martin:

Headquartered in Bethesda, Maryland, Lockheed Martin is a global security and aerospace company that employs approximately 98,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. For additional information, visit our website: www.lockheedmartin.com.

About Raytheon:

Raytheon Company, with 2015 sales of $23 billion and 61,000 employees, is a technology and innovation leader specializing in defense, civil government and cybersecurity solutions. With a history of innovation spanning 94 years, Raytheon provides state-of-the-art electronics, mission systems integration, C5ITM products and services, sensing, effects, and mission support for customers in more than 80 countries. Raytheon is headquartered in Waltham, Massachusetts. Follow us on Twitter @Raytheon.

Defence Industry

Supacat develops new variants of HMT family to optimise Jackal and Coyote in Core and meet new requirements

Following the UK MoD decision to take `Jackal` and `Coyote` into its Core Fleet, Supacat is developing additional variants and conversions of its HMT family to meet wider and emerging requirements that the vehicles can fulfil . The aim of the new variants is to help the customer see how they can optimise their existing fleet and enhance capability, interoperability, commonality, efficiency and value for money.

The new variants include HMT in the Recovery, Logistic Support and Gun Towing roles as well as a unique 4Ч4 to 6Ч6 convertible feature for `Jackal`. At DVD Supacat is unveiling the Logistic Support and Recovery variants, the former will be exhibited on the Supacat stand and the latter as a static display on the off-road area.

Supacat is also highlighting how the 4Ч4 `Jackal` can be re-rolled into a 6Ч6 `Coyote` using the unique convertible concept of its HMT Extenda special operations variant to increase payload, capacity and range. By inserting or removing a self-contained third axle HMT Extenda is convertible to a 4Ч4 or 6Ч6 configuration within a day to meet different operational requirements.

"The new variants demonstrate the flexibility of the HMT platform and the different roles it can perform now and in future programmes where it could be offered", said Phil Applegarth, Head of Supacat. "For UK MoD programmes where we do not have a direct product to offer we are looking for teaming opportunities with international primes, similar to our partnership with Rheinmetall on its bid for the Challenger 2 Life Extension Programme".

Supacat is also displaying at DVD its all-new LRV400 Mk2 light reconnaissance vehicle, a high performance off-road vehicle for rapid intervention operations. It offers a highly versatile tactical capability for special forces; it has the unique 4Ч4 to 6Ч6 convertible feature and can be transported inside a CH-47 Chinook fully equipped and loaded, making it immediately deployable. At DVD, Supacat will be displaying a concept demonstrator 6Ч6 version of the LRV.

Defence Industry

MBDA`s MMP Anti-tank Guided Weapon – next generation capability today

MBDA has started production of the MMP medium-range Anti-Tank Guided Weapon, with deliveries to the French Armed Forces due to take place next year. The Fifth Generation missile is designed to defeat current and future threats and will replace the Milan and Javelin anti-tank missiles of the French military. MMP is a flexible system allowing engagement of a broad target set, rapid into action times and Lock on Before Launch, Fire and Forget mode alongside Lock after Launch, Man in the Loop engagements for collaterally sensitive scenarios.

MMP offers unparalleled precision over its 4,000+ metre range allowing the operator to defeat the target

beyond counter fire ranges. A dual mode seeker; uncooled infrared and visible colour channels allows a broad range of targets to be engaged including those with low thermal contrast, a fibre-optic data link making it possible to maintain "man-in-the-loop" control to allow third party designated targets to be engaged outside the launch platforms line of site. The missile's multi-purpose lethal package (anti-tank, anti-personnel and anti-structure) can defeat targets ranging from heavy tanks with reactive armour to infantry entrenched within structure.

With 20 test firings and numerous ground tests MMP has validated all performance requirements, such as deployment in extreme environment and temperature conditions, shooting under infra-red and colour TV guidance at extreme long-range targets (4,100 meters), firing in confined spaces, and warhead versatility to ensure effectiveness against varied targets.

MMP has been designed from the outset for both dismounted troops and vehicle integration. MMP is being integrated onto multiple vehicles and turrets demonstrating the exceptional flexibility of this system for modern Armies. MMP provides an ideal solution for Australian defence programmes such as LAND 400 and LAND 4108.

Defence Industry

CV90 Infantry Fighting Vehicle makes Australian debut

CV90 is a family of tracked combat vehicles designed by BAE Systems in Sweden, with more than 4.5 million engineering hours contributing to the development of this advanced IFV. The CV90 family offers high performance and unique operational advantages.

The combat proven vehicle provides high tactical and strategic mobility, air defence, anti-tank capability, high survivability, and lethality in any terrain or tactical environment. CV90 has a pedigree of multiple successful worldwide operations that include United Nations and NATO missions.

As a tracked, turreted, digital, combat-proven IFV capable of carrying eight dismounts, CV90 is the only vehicle of this type in the world that is in ongoing production, and is a low-risk, military off-the-shelf offering that is ready now for Phase 3. BAE Systems submitted the offering in February.

Combined with the E35 turret, the CV9035 — a variant of the vehicle with a 35mm gun system — provides superior lethality with a high level of commonality with the AMV35 offered for Phase 2. With proven operations around the globe, CV90 will bring the Commonwealth a mature, low total-ownership cost, sustainment program.

Like the AMV35, CV90 for Phase 3 is well positioned to support and integrate Australian Industrial Capability to deliver jobs and sovereign capability. CV90's proven design pedigree ensures the growth capacity to address the Commonwealth's evolving operational requirements of the planned 30-year life of type.

There are nine different CV90 variants in service, with a total of more than 1,280 vehicles sold to seven European nations, including four NATO members. The latest variant is currently in production for Norway.

BAE Systems will be hosting a media briefing on the CV90 on Wednesday, September 7, at 12:00 p.m. at the company's stand located at hall one, stand 1N10.

Robots

Harris Corporation to Demonstrate Robotic Bomb Disposal Technology at Raven's Challenge in Thailand

Harris Corporation robotics specialists will demonstrate the company's T7 Explosive Ordnance Disposal (EOD) robot at Raven's Challenge, the world's premier event for EOD and counter-improvised explosive device (C-IED) technology and tactics. The challenge will be held in Hua Hin, Thailand, Sept. 5-9, 2016.

The multi-day event brings multi-national, multi-service teams together to tackle realistic EOD scenarios with functional training that replicates real-world incidents. The exercises are an opportunity for experts to share knowledge and best practices while demonstrating new technologies at the cutting edge of this critical dimension of public safety.

"Harris has assembled one of the world's finest robotics teams to extend the reach of human operators to safely and effectively deal with C-IED and EOD situations," said Ed Zoiss, president, Electronic Systems. "Years of research and continuous feedback from active-duty operators have gone into building the T7, and we look forward to showing the world what this innovative system can do."

Harris develops robotic solutions for ground and maritime environments, designed with the user in mind. Specializing in intelligence, surveillance and reconnaissance, EOD, and hazmat clearance, Harris robotics connect, inform and protect the warfighter under the most demanding conditions.

Robots

Milrem Targets the UK Market with Its First-of-Its-Kind UGV THeMIS

The Estonian defence solutions provider Milrem aims to get their foot in the door in the UK market with their first-of-its-kind unmanned ground vehicle THeMIS. The company will be exhibiting the vehicle together with Raytheon UK at DVD 2016 in Millbrook.

Milrem and Raytheon have been working on a new generation C-IED (Counter Improvised Explosive Device) platform that features the THeMIS UGV and Raytheon's IED detection sensor system GroundEye. The concept will be exhibited at the Millbrook Proving Ground on September 7-8, where the land systems and equipment focused exhibition DVD will be held.

"United Kingdom has always been one of the technology leaders in the military field. Unmanned ground vehicles will be a new capability that will change the face of warfare. I see that the UK will definitely be one of the forerunners in implementing the capabilities of unmanned systems," said Kuldar Vддrsi, CEO of Milrem.

"Milrem's THeMIS has strong potential to be used in many different applications – from simple squad support transportation to weaponized and C-IED solutions," he added.

The THeMIS is the first fully modular unmanned ground vehicle. It has a width and length of 83 inches and a height of 38.5 inches and consists of two track modules where everything necessary to make the vehicle move has been placed. This approach gives the vehicle a high payload of at least 1655 lbs and leaves the middle platform free to carry various superstructures that are easily exchangeable.

Defence Industry

Supacat to deliver Special Operations Vehicles – Mobility Heavy (SOV-MH) to New Zealand

The New Zealand Ministry of Defence has awarded a contract to high mobility vehicle specialist Supacat, to deliver Special Operations Vehicles – Mobility Heavy (SOV-MH) for the New Zealand Defence Forces. Supacat is also in the process of agreeing a long term support contract with the New Zealand Defence Force to support the new fleet. The new SOV-MH vehicles are based on the latest MkII version of Supacat's HMT Extenda and provide a high level of commonality with the equivalent vehicles with other Special Forces.

The program will commence vehicle deliveries in the final quarter of 2017.

SC Group CEO, Nick Ames, said "We are delighted that New Zealand has chosen to join the HMT family. Interoperability is an important element for the Special Forces community and commonality of spares and support, is a key driver in maintaining relatively small fleets."

Designed for, and used by, the world's elite Special Forces, the HMT Extenda is unique in being convertible to either a 4Ч4 or 6Ч6 configuration to meet different operational requirements. Its open architecture provides for various levels of protection and great variety in the roles and missions for which it can be configured. New Zealand is a new customer for Supacat and the latest defence force to join the HMT family.

Michael Halloran, Managing Director Asia Pacific said, "We are very pleased to have reached this milestone with our friends in New Zealand and we are dedicated to providing the New Zealand Defence Force with the best cross country wheeled mobility in the world. This is a very exciting time for the Supacat team in Australia as it is the first time that we have entered into a product export contract."

The SOV-MH vehicles will be manufactured at Supacat's existing assembly facilities in Australia using Supacat Team Australia members to manufacture and assemble the vehicle. This represents the first time that Supacat Team Australia members will be exporting completed vehicles and complements the opportunities already emerging for Australian suppliers to enter Supacat's global supply chains.

Defence Industry

GD Showcases AJAX Progress

General Dynamics Land Systems–UK has successfully completed an additional live firing test for AJAX, the British Army's new Armoured Fighting Vehicle, at a range in West Wales.

The testing, which took place throughout July and August, involved both the turreted AJAX variant and the ARES variant. It focused on generating specific data and evidence to support manned firing trials planned for early

next year.

The turreted AJAX firing trials were conducted by a joint General Dynamics Land Systems–UK and Lockheed Martin UK team, with support from CTA International. The trials were observed by the UK Ministry of Defence.

The AJAX testing included the firing of the CTA International 40mm cannon, the coaxially mounted 7.62mm machine gun and smoke grenades. The ARES variant tested the firing of the Kongsberg PROTECTOR Remote Weapon System, which included the firing of the General Purpose Machine Gun (GPMG), Heavy Machine Gun (HMG), Grenade Machine Gun (GMG) and smoke grenades.

Throughout the firing trials, General Dynamics Land Systems–UK completed a comprehensive set of more than 400 individual tests on both prototype combat vehicles.

Chief of Materiel (Land) at the MoD's Defence Equipment and Support organisation Lieutenant General Paul Jaques attended the live firing trials in August. He said: "The completion of these live firing trials marks an important milestone towards fulfilment of the AJAX programme, the British Army's largest single order for armoured vehicles for more than 30 years. This national project will equip our troops with a fleet of world-class armoured vehicles, which will form a central component of the UK's new Strike Brigades."

Kevin Connell, vice president of General Dynamics Land Systems–UK, said: "The AJAX trials programme continues to go from strength-to-strength in showcasing the capability this family of combat vehicles provides the British Army. Manned firing trials, planned for early next year, will again demonstrate the step-change in capability this vehicle provides, and marks a significant step towards the delivery of AJAX to our customer."

Other trials planned for AJAX prototypes in the coming months include automotive, cold chamber, power systems and Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR) capabilities.

The range of AJAX variants will allow the British Army to conduct sustained, expeditionary, full-spectrum and network-enabled operations with a reduced logistics footprint. They will operate in combined-arms and multinational situations across a wide-range of future operating environments. The first British Army squadron will be equipped by mid-2019 to allow conversion to begin with a brigade ready to deploy from the end of 2020.

AT Communication is pleased to announce the expansion of its Tactical range of transceivers with the launch of the Sentry-H™ High Frequency (HF) SDR radio

AT Communication is pleased to announce the expansion of its Tactical range of transceivers with the launch of the Sentry-H™ High Frequency (HF) SDR radio. The Sentry-H™ is built using the field proven Envoy HF SDR architecture. The Sentry-H™ gives operators a secure high-powered software defined radio designed specifically with rugged mil-spec environmental conditions at a competitive price point.

The Sentry-H™ provides high-power voice and data in a single RF unit. The Sentry-H™ delivers second-generation digital voice, uniquely available customizable frequency hopping, embedded GPS, 3G ALE, and IP/USB connectivity. The Sentry-H™ is suited for both mobile and base configurations without the need for an external amplifier. The system features a smart handset with an intuitive menu system with multiple language options and support for H250 handsets and accessories.

Key Features of the Sentry-H™ include:

- Future-proof SDR design
- Rugged smart handset with color display and integrated GPS
- Multi-language user interface
- Optimized for mobile and base
- 150 W PEP
- Wide range of Voltage inputs for use with any power source
- Second Generation Digital Voice
- STANAG/MIL-STD-188-110B data waveforms (up to 19k2 bps)
- AES-256 digital COMSEC
- Frequency Hopping
- MIL-STD-188-141B ALE
- Waterproof MIL-STD-810G construction
- IP/USB Connectivity
- Interoperable with 2110M Manpack
- H-250 Accessories support
- Worldwide service and support

The Sentry-H is suited for military organizations that demand uncompromised, secure long range voice and data communications. With 150W of RF power, it has been designed in consultation with military users to be small and light for simple integration into new and retrofit vehicle and base station configurations.

Sentry-H is available with an ergonomic smart handset

with a color, high-resolution multi-language interface.

SOFTWARE DEFINED ARCHITECTURE

Sentry-H uses the latest high-performance Digital Signal Processor (DSP), Field-Programmable Gate Array (FPGA) and system on chip (SoC) technology. Using a field proven SDR platform based upon the Envoy with thousands of hours of operation in the field, Sentry-H delivers market-leading performance and future upgradability via software updates.

Software Defined Architecture enables military signals organizations to install new capabilities, support evolving standards and ensure sustainability.

RUGGED AND EASY-TO-USE SMART HANDSET

The Sentry-H smart handset features a large color display with complete radio and configuration control via the easy to use keypad and icon based menu system. With a loudspeaker mode, built-in GPS receiver/antenna, and USB programming port, the Sentry-H handset provides access to key functionality at the operator's fingertips.

HIGH POWER FOR BASE AND MOBILE CONFIGURATIONS

The Sentry-H is the military industry's first HF radio delivering 150W of RF power without the added cost, weight and installation complexity of an external amplifier. The in-built power amplifier provides full-duty cycle performance across the complete HF band for all supported modes. Designed for maximum efficiency and a wide range of DC input voltages, the Sentry-H can be used in all vehicle and other battery based systems.

The rugged RF unit is made out of a high-grade metal cast chassis and exceeds MIL-STD-810G providing confidence to communicate no matter what the operating conditions.

The Sentry-H™ addresses the most important issues for operators of tactical radios — security,

SECURE VOICE COMMUNICATIONS

Sentry-H™ comes with second generation Digital Voice technology providing a significant improvement in High Frequency (HF) voice communications. A full digital mode coupled with highly optimised vocoder technology provides voice quality similar to that experienced

with cellular phones. The Sentry-H™ advanced and unique digital voice codec allows it to transmit and receive in signal conditions that competing radios would simply not be able to communicate.

A range of COMSEC options are available with the Sentry-H, from CES-128 grade voice encryption through to full AES-256 encryption of digital voice and STANAG/MIL-STD data. The AES-256 encryption supports 256 by 64 bit keys with additional layers of protection possible by incorporating unique radio id's.

All voice encryption options for Sentry-H can be activated by a hotkey fully integrated with core radio functions like Selcall and ALE calling to ensure simplicity of operation. It is also possible to configure Sentry to automatically enable encryption on specified networks.

Key Management software is used to generate the key files, and Key Fill software or a USB memory stick may be used to load pre-defined operational parameters into the radio.

SECURE CHAT AND EMAIL COMMUNICATIONS

The Sentry-H is hardware ready for data communications and is delivered with a 2400 bit/s robust data modem as standard. This modem is supported with a Chat application which provides peer-to-peer text chat, email, and file transfer with an easy to use menu in multiple languages.

With a software install the Sentry-H may be upgraded to full MILSTD/ STANAG data capability with data rates up to 19k2 bps with Independent Sideband (ISB) using an HF email application.

TRANSEC VIA FREQUENCY HOPPING

The Sentry-H can be enabled with Frequency Hopping capability to prevent third party interception of transmitted communications. A unique feature of the Sentry-H™ is the ability to customise the Frequency Hopping vectors. Operators can select from up to 31 user programmable hop plans, each comprising a hop name, rate, bandwidth and encryption key adding an additional layer of security not possible with competing transceivers.

Additional information security can be achieved with the use of one-time session PIN's, and also combining Frequency Hopping with CES-128 voice encryption.

MIL-STD-188-141B ALE (Automatic Link Establishment)

Sentry-H delivers MIL-STD-188-141B ALE and FED-STD-1045 ALE capability as standard, ensuring interoperability with other transceivers using these protocols. It comes with

advanced link management technology (CALM™), which improves the performance of standard ALE by time stamping the channel quality (LQA) information. The ALE call system is fully integrated in the software providing a seamless transition between channel linking and subsequent operations such as data transfers.

IP /ETHERNET / USB CONNECTIVITY

Sentry-H IP based design facilitates remote access and the Handset USB port connection to the transceiver programming application. Alternatively, a conventional USB memory stick can be connected for radio profile setting, security key fill and firmware upgrades in the field.

GPS SUPPORT

Sentry-H has embedded GPS receivers in the RF Unit and Handset with GPS, GLONASS and BEIDOU navigation systems supported. The Sentry-H RF Unit has a connection point for an external remote GPS antenna if needed. An operators distance and bearing from a remote HF station or waypoint can be displayed graphically via the handset user interface.

Applications of the Sentry-H™ include; military, border security, paramilitary, peace keeping, drug interdiction etc.

The Sentry-H™ can be integrated with other communication systems in the AT Communication International product range to provide multi-frequency, multi-agency applications including asset tracking, situational awareness and mission planning software and hardware platforms.

AT Communication is pleased to launch the Sentry-H™ and provide our customers with the latest generation of tactical military radio with a combined feature set significantly outperforming transceivers currently available in the HF market.

For more information, please do not hesitate to contact us via this link http://at-communication.com/en/hf_ssb_military/at/sentry-h_sdr_hf_radio.html