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Defence Industry

Patria Nemo Container test firings on land completed

The latest member of Patria's Game Changers of the Battlefield – Patria Nemo Container – showcased for the first time at the IDEX 2017, has completed successfully its first test firings on truck platform.

Patria Nemo Container was undergoing vigorous test firings both on Sisu ETP E13 8x8 off-road truck as well as stand-alone on ground during Patria's tests in Finland. These tests were mainly concentrated around testing the integration of the Nemo mortar system into a sea container - in other words testing the interface of the turreted mortar system and the 20" sea container. Also, another important part was testing the interface of the Patria Nemo Container and Sisu ETP E13 8x8 off-road truck.

Patria Nemo Container was performing as expected and the ground breaking concept of the 20" sea container with 120 mm turreted mortar system was proving its ingenuity by combining unforeseen flexibility/mobility & firepower. It is able to operate as a stand-alone firing unit, both with direct as well as with indirect fire, thus being ideal for camp protection. More importantly Nemo Container proved it is mobile and agile as its "brothers" integrated directly onto land (Patria Nemo) or naval platforms (Patria Nemo Navy). Patria Nemo Container was functioning perfectly while being on container truck – this time on armoured Sisu ETP13 8x8. Rapid response, accuracy, shoot & scoot, firepower, protection, mobility - all the characteristics of Patria's "Game Changers of the Battlefield" were accomplished.

Patria Nemo Container opens up - a whole new market segment for Patria's Game Changers of the Battlefield – the advantages of modern turreted mortar systems combined with unlimited variety of platforms – both on land & sea.

Exhibitions

Rheinmetall at MSPO 2017

This year, from 5 to 8 September, Rheinmetall will be present in Kielce, Poland, exhibiting its array of products and services at MSPO. The Dьsseldorf, Germany-based high-tech Group for security and mobility will be showcasing solutions for both external and internal security.

For the first time at MSPO, Rheinmetall's agile, highly protected family of Lynx combat vehicles will be on display. Lynx comes in two versions: the KF 31 (on display) and KF 41. KF stands for Kettenfahrzeug, German for 'tracked vehicle'; the number refers to the vehicle's military weight class. Both versions can be configured for a multitude of different roles, e.g. as infantry fighting vehicles or as armoured reconnaissance and forward observation vehicles. The IFV version of the KF 31 on display at MSPO features a two man Lance turret equipped with the airburst-capable Rheinmetall MK30-2/ABM automatic cannon as its main armament. It is also fitted with a twin launcher for the Spike antitank guided missile. Based on tried-and-tested components and technologies, Lynx is now one of the world's most advanced medium-weight combat vehicle. It thus offers an attractive alternative for numerous force modernization projects. The Lynx KF 31 and Lance turret recently demonstrated their effectiveness during competitive trials staged by a European NATO partner.

Furthermore, visitors to MSPO 2017 can also learn about Rheinmetall's extensive expertise in the Leopard 2 domain. This ranges from comprehensive maintenance and modernization programmes to advanced weapon concepts and the unique knowledge that stems from being a longstanding original equipment manufacturer. Training and simulation technology for Leopard 2 crews likewise figure prominently in Rheinmetall's product portfolio.

In an industrial partnership with Polska Grupa Zbrojeniowa (PGZ) and Zaklady Mechaniczne Bumar-Łabędy S.A. (ZMBL), Rheinmetall is currently modernizing 128 Leopard 2A4 main battle tanks, upgrading them to the new and enhanced Leopard 2 PL build standard. A Leopard 2 PL is on display at the PGZ stand, Rheinmetall's Polish partner.

Rheinmetall will also be showing its extensive expertise in weapons and ammunition systems as well as sensor technology, to say nothing of its globally leading role in gun-based air defence.

A strong team in Poland

Founded in August 2016, Rheinmetall Defence Polska symbolizes Rheinmetall's heightened presence in Central Europe. A subsidiary of Rheinmetall Landsysteme GmbH, the company has two locations, one in Warsaw and one in Gliwice. It serves as a partner to the Polish defence industry as well as providing the Polish armed force with technological and logistical support. ZMBL and Rheinmetall Defence Polska won the order to modernize Poland's fleet of Leopard 2A4 tanks, which is being carried out in close cooperation with other Polish

contractors like PCO, OBRUM and ZM Tarnow, assuring a very high degree of Polish input. Moreover, Rheinmetall Defence Polska is establishing its own service capabilities in order to provide services to Polish industry and the Polish armed forces, such as consultancy, on-site support, training, repair of components, provision of spare parts, etc. It also intends to cooperate with Polish and foreign companies in production and repair operations.

Furthermore, Rheinmetall Defence Polska simultaneously serves as the Polish hub for all Rheinmetall Defence companies, making it the first point of contact for the Polish government and armed forces as well as Polish defence contractors. This one-face-to the-customer approach assures clear lines of communication between Poland and the Rheinmetall Defence Group.

Rheinmetall Defence Polska is lead by a strong team: Andrzej Raszewski took over as Chief Executive Officer in August 2017. An experienced manager, he brings with him many years of senior management experience in the energy sector. At his side is Otmar Schultheis, the company's Chief Operating Officer and member of the management board of Rheinmetall Defence Polska. A former Bundeswehr armour corps officer, he has been with Rheinmetall for over thirty years, where he has accumulated vast experience in tank technology, sales and project management both at home and abroad.

Defence Industry

SPIKE LR II - 5th Generation multi-purpose, multi-platform precision-guided missile

Rafael Advanced Defense Systems Ltd. unveils SPIKE LR II, a new 5th generation variant of the SPIKE Family that can be fired from vehicles, helicopters, ships, and ground launchers. The new missile will be presented for the first time at the Paris Air Show in June. Rafael has supplied over 27,000 SPIKE Missiles and systems to over 26 countries.

SPIKE LR II is an advanced multipurpose missile, weighing only 12.7 kg, designed for modern warfare with almost full commonality to the SPIKE Missile legacy and can be launched from any SPIKE Launcher.

For increased lethality, SPIKE LR II includes two unique state-of-the-art advanced and highly capable warhead configurations: a Tandem HEAT warhead configuration, enhancing armor penetration capability by more than 30%, and a new multipurpose blast warhead, which includes controlled fusing (by the gunner) for control of the desired effect.

SPIKE LR II has a range of 5.5 km when fired from ground launchers (an increase of more than 35% above the 4 km range of the original SPIKE LR) and up to 10 km when fired from a helicopter (using alternative option of RF Data link).

The SPIKE LR II has a modern electro-optical seeker which includes a high quality un-cooled IR sensor and an advanced high definition color day sensor. The new seeker includes capabilities of a smart target tracker with AI features (Artificial Intelligence).

SPIKE LR II was designed against new modern targets with low signature, time-sensitive characteristics. To counter this SPIKE LR II includes an embedded IMU (Inertial Measurement Unit) for missions of third party-target allocation, allowing the firing of the missile to grid target coordinates, including advanced armor and protection systems. The SPIKE LR II is one of the only missiles in the world with an inherent CAPS capability.

Mr. Moshe Elazar, Executive Vice President and Head of Rafael's Land and Naval Systems Division stated that the new missile addresses the complex challenges of the modern battlefield. "The development of the SPIKE LR II is based on Rafael's vast experience in the development of a wide variety of missiles over the years, and was largely possible due to Rafael's close cooperation with the users at the IDF and other militaries around the world."

Contracts

General Dynamics Receives Contracts to Upgrade Abrams Main Battle Tanks

General Dynamics Land Systems, a business unit of General Dynamics, recently received two contract awards from the U.S. Army for Abrams main battle tank upgrades, which will boost the platform's capabilities and help the Army lead the way into the future.

The company will design, develop and integrate multiple engineering changes into the Abrams M1A2 System Enhancement Package Version 3 (SEPv3), creating a SEPv4 and further modernizing the tanks. Abrams main battle tanks are produced at the Joint Systems Manufacturing Center in Lima, Ohio.

The first contract is for SEPv4 upgrades, which include the Commander's Primary Sight (formerly known as the Commander's Independent Thermal

Viewer), an improved Gunner's Primary Sight and enhancements to sensors, lethality and survivability. General Dynamics Land Systems will deliver seven prototype M1A2 SEPv4 tanks to the Army. The contract has an initial value of $311 million. Work will be performed in Sterling Heights, Mich.; Lima; Scranton, Pa.; and Tallahassee, Fla.

The second award was a $270 million contract from the U.S. Army Tank Automotive Command to produce 45 Abrams M1A2 SEPv3 tanks. The first pilot vehicles, which feature technological advancements in communications, reliability, sustainment and fuel efficiency and upgraded armor, are expected to roll off the production line in fall 2017. Work will be performed in Lima, Scranton, Tallahassee and Anniston, Ala.

Exhibitions

Prominent presence in Poland for Denel

The company will be on display at the International Defence Industry Exhibition - MSPO - from 4 to 8 September.

Denel will have a strong marketing presence at Central and Eastern Europe's most prominent defence and technology exhibition, taking place in Poland next month.

The International Defence Industry Exhibition - MSPO - takes place from 4 to 8 September and brings together heads of armed forces, defence decision-makers, analysts and media from across Europe. It is the 25th exhibition in the historic city of Kielce, and the second successive year Denel will display some of its products.

"Eastern and Central Europe are important target markets for Denel, especially in the fields of landward defence, armoured vehicles, mine-protected vehicles and infantry weapon systems," says acting group CEO of Denel, Zwelakhe Ntshepe.

Many of the countries in the region - including Poland - are in the process of modernising their armed forces to meet the changing geopolitical environment. Denel is looking at marketing opportunities for its products and systems in at least eight European countries, including Romania, Kazakhstan, Serbia, Italy and Sweden.

Five companies in the Denel group will participate with a range of their products. Denel PMP will display its small- and medium calibre ammunition range, as well as the PAW-20 personal assault weapon, which is capable of firing grenades over a distance of 400 metres with pin-point accuracy.

The Denel Overberg Test Range has positioned itself as one of the most advanced facilities for the testing of aircraft weapon systems, missiles and unmanned aerial vehicles in the southern hemisphere. The range has hosted a number of European defence forces in recent years and will use the MSPO to market its services.

Denel Land Systems will showcase its prowess in the landward defence arena focusing on its track record in the design and manufacturing of artillery systems, infantry combat vehicles and combat turrets. Both Denel Vehicle Systems and LMT will provide information on their military vehicles and mine-protection technology to visitors at the show.

MSPO has, over the years, grown to be one of the world's leading defence exhibitions. In 2016, it attracted more than 600 exhibitors from 46 countries, while 22 000 visitors passed through the gates during the five-day event.

Exhibitions

Bumar Labedy represents the PT-17 MBT on the MSPO 2017

On MSPO 2017, the Polish company Bumar Labedy introduced a technology demonstrator designated by them as PT-17.

This is a joint project between the Polish company Bumar Labedy and the Kharkiv Morozov Machine Building Design Bureau (KMDB) from Ukraine. The Ukrainian company supplied a turret with a gun of 120 mm caliber and autoloader. Other components, such as 6TD-2 tank engines with a power of 1,200 h.p. and an auxiliary power unit also can be supplied by Ukrainians.

Last year, during MSPO 2016, Bumar Labedy introduced the PT-16 as a proposal for upgrading the T-72 and PT-91 tanks.

The technology demonstrator, presented on MSPO 2017, is based on the chassis of the PT-91M ЬИЕ. It is powered by a 1000-h.p. S-1000R diesel engine, produced by PZL Wola. At the basis of the turret of the new tank is a construction that was used in the technology demonstrator of the KKBM, known as the T-72-120, which was shown at the Eurosatory exhibition in Paris in 1999. It is equipped with a KBM2 120 mm smoothbore gun, which is based on the 2A46M 125 mm tank gun and is compatible with NATO ammunition. The autoloader provides a rate of fire from 5 to 9 rounds per minute.

On the PT-17 MBT can be installed various types of add-ons armor, both passive and ERA - it all depends on the needs of the customer. The Ukrainian company Mikrotek also can supply ZASLON active armor. Currently, it is planned that the PT-17 will be equipped with a Safran-15 fire control system with a gunner's thermal sight and a VIGY-15 panoramic commander sight. However, the demonstrator presented in Kielce is equipped with two day-night optoelectronic devices GOC-1 NIKE and GOD-1 IRYS, supplied by the Polish company PCO. The final configuration depends on the requirements of the customer.

Exhibitions

Model of the Milkor 4x4 will be displayed at DSEI 2017

Milkor is a South African defence company which was established in 1981 as an original designer and manufacturer of the hand held 40mm Multiple Grenade Launcher weapon systems. Over the past 36 years, Milkor has supplied in excess of 60,000 weapons to more than 60 countries worldwide to military and law enforcement ranging for lethal to less-lethal.

Milkor is busy expanding the product range to include armoured vehicles. The first prototype of a 4x4 armoured vehicle planned to start manufacturing in early 2018 has been advanced. This first design will be called Milkor 4x4 and has a V-shape hull for better mine protection and B7 ballistic protection. This vehicle is suitable for defence forces, police, and security forces as an armoured personnel carrier, ambulance, anti-riot vehicle as well as command vehicle with up to 8+2 passenger capacity. Milkor 4x4 will be fitted with all available technology to stand against IEDs. Different weapon systems are offered with this vehicle including remote controlled weapon station (RCWS) with automatic grenade launchers (AGL). A model of the Milkor 4x4 will be displayed at DSEI 2017 for the first time.

Milkor's vision is to be a supplier of a wider range of defence and security products. Current product range company offering to market is including 40mm grenade launchers, ammunition, sighting systems, armoured vehicles, weapon systems for vehicles, bulletproof vests, complete uniforms, deployable tents, etc.

Milkor prides itself in providing after sales service of high quality and standard, currently maintaining a status of zero rate complaints, rejections and returns.

Exhibitions

SAAB's Mobile SHORAD Rolls Into DSEI For The First Time

Defence and security company Saab will present for the first time ever at an exhibtion, the vehicle-based MSHORAD (Mobile Short Range Air Defence) solution – comprising the Giraffe 1X radar, Command and Control (C2) and RBS 70 NG Remote Weapon Station (RWS). The system will be on display at Saab's stand, N2-230, at DSEI, London, England.

Where the market demands on-the-move air defence protection against agile and hard to detect targets, Saab has responded with the MSHORAD system, which combines world-class surveillance capabilities with the rapid ability to counter those threats.

The 3D short range Giraffe 1X provides 360є surveillance coverage at a range of 75 km, generating data to a C2 communication system for swift analysis and action coordination. With an effective intercept range of 9 km, the high precision RBS 70 NG RWS, with its multiple missile launcher, ensures coverage from ground level up to an altitude of 5 km, launching unjammable, laser-guided missiles with a high hit probability. Together as MSHORAD, the solution gives forces the ability to see and counter multiple threats while defending nearby joint forces.

"With most modern battlefields seeing an increasing variety of airborne threats, MSHORAD provides the coverage needed in complex and challenging settings. We offer an in-house solution from a company that really understands ground based air defence, customer needs and excels at system integration", says Anders Linder, head of business unit Surface Radar Solutions within Saab's business area Surveillance.

"Mobile air defence brings major advantages when armed forces are on the move. As a true mobile system, MSHORAD gives customers' maximum operational flexibility and provides outstanding situational awareness and defensive cover on the move", says Stefan Цberg, head of business unit Missile Systems within Saab's business area Dynamics.

Visit Saab at DSEI stand N2-230 to find out more about the MSHORAD solution where the system will be mounted on an IVECO vehicle.

Defence Industry

U.S. Army Places $177 Million Order For 611 Joint Light Tactical Vehicles

OSHKOSH, Wis. -- Oshkosh Defense, LLC, an

Oshkosh Corporation company, announced today that the U.S. Army has placed another order for the Joint Light Tactical Vehicle (JLTV) program, including 611 vehicles and 1,789 installed and packaged kits. The order, valued at more than $177 million, is the sixth order for JLTVs since the contract was awarded in August 2015.

"The Oshkosh® JLTV provides new levels of protected mobility, off-road capability, and transportability that is simply unseen on today's modern battlefield," said Dave Diersen, Vice President and General Manager of Joint Programs at Oshkosh Defense.

"Today, combat operations around the globe require the force to be mobile, fast, hard-hitting, and well-protected. The JLTV answers that call on every level."

The Oshkosh JLTV is intended to replace the U.S. Army and Marine Corps aging up-armored HMMWV fleet. Designed more than 35 years ago to transport troops and equipment in non-combat environments, the HMMWV failed to evolve to meet new threats and changing tactics, leaving Warfighters vulnerable to attack. As the battlefield threats change, so should the fleet to support new missions.

"Our goal was to give the armed forces greater flexibility to ensure the JLTV is effective not only today but also for decades to come," Diersen continued. "As battlefields shift and the challenges facing land forces change, our JLTV solution will adapt. That includes protecting our troops from different threats and also getting them to where they need to be, and back home safely."

Exhibitions

Supacat unveils LRV600 at DSEi Demonstrating LRV flexibility and increased capability in 6Ч6 configuration

Supacat is unveiling LRV600, the 6Ч6 configuration of its high performance off-road Light Reconnaissance Vehicle (LRV), at DSEi offering users the ability to increase their capability and payload, whilst remaining air portable from inside a CH-47 Chinook.

Developed for rapid intervention operations in harsh environments, the LRV platform has the distinctive design feature of being convertible between 6Ч6 and 4Ч4, offering users the flexibility to reconfigure the vehicle to meet different operational requirements within hours by the addition of a 3rd axle module.

LRV600 has a maximum Gross Vehicle Weight (GVW) of 5500kg and offers a maximum payload of 2350kg, over 50% more than the LRV400 Mk2 configuration. LRV400 Mk2's maximum GVW is 4200kg and maximum payload 1500kg. LRV600 is 1m longer at 5.65m but can be shortened to less than 5.5m if required. Both LRV600 and LRV400 Mk2 carry a crew of 3 or 4 and achieve speeds of up to 100mph/160km.

"The Supacat LRV600 demonstrates the unique flexibility of the LRV platform enabling users to convert between 4Ч4 and 6Ч6 depending on their mission. LRV600's increased capability and air portability also sets it apart as a tactical capability for special operations", said Phil Applegarth, Head of Supacat, part of the SC Group.

LRV 600 will have a new weapon system fitted at DSEi which is a first for land based, special forces vehicles of this type. Working together with the US company, Arnold Defense, and a team of industry experts, Supacat has integrated the 'FLETCHER' 2.75-inch laser guided rocket system in a demonstration of the newly launched FLETCHER concept. The system provides the user with firepower that would otherwise involve calling in air or aviation assets.

In developing LRV Supacat has taken the rolling chassis and automotive systems from the Land Rover Discovery and adapted them for specialist military applications to offer unrivalled performance for a vehicle of its size and weight class. Using a mass-produced automotive platform delivers reliability, safety and cost efficiencies. In addition, the vehicle is ITAR free and can be supported via the existing globally available spares network enhanced by Supacat's established military vehicle through life support service. LRV has been developed with a common user interface to its Supacat HMT `Jackal` to maximise inter-operability and minimise training.

LRV has front and rear independent double wishbone air suspension offering variable ride height including bump stops providing a highly stable firing platform. Powered by a V6 3.0 turbo diesel providing 256 bhp and 600Nm Torque giving a high power to weight ratio, it has an 8 speed automatic transmission and high and low permanent 4WD with centre diff lock.

Exhibitions

Patria's latest technology featured at DSEI 2017

Patria attends DSEI 2017 event held on 12-15th September at ExCel in London, showcasing Patria AMV XP armoured wheeled vehicle integrated with Kongsberg PROTECTOR Dual RWS. Patria will also highlight its know-how in simulation technology by

demonstrating Patria AMV Part Task Trainer networked with Patria Nemo Training Simulator. Patria's stand is located at exhibition lot N6-160.

Patria AMV XP vehicle offers Extra Payload, Extra Performance and Extra Protection

Nearly 1,600 Patria AMV vehicles have already been ordered. They are used in challenging conditions by customers in seven countries. AMV products are under continuous development and are fitted with the latest technology. Patria AMV's structural solutions enable a high payload capacity, a high level of protection and the integration of heavy weapons systems. The vehicle has received excellent feedback from customers for its performance in combat and crisis management operations in Afghanistan and Chad. Patria AMV XP provides further strength to the company's product range. The name Patria AMV XP links the product strongly to Patria AMV product family and the abbreviation XP stands for Extra Payload, Extra Performance and Extra Protection.

At DSEI Patria will showcase Patria AMV XP armoured wheeled vehicle as an APC variant integrated with Kongsberg PROTECTOR Dual RWS equipped with 12.7 mm HMG and Javelin AT missile. The vehicle offers modular ballistic, mine and IED-protection system according to customers' requirements. It also has the readiness for future protection technologies as well as future soldier equipment.

Features of the vehicle's mission system include double weapon system controls for Commander and Gunner. It also has new Commander's and Gunner's stations with full 360° periscope view and roof hatches.

The vehicle offers space for a crew of three persons and eight dismounting soldiers and a modular storage system for section and personal equipment. The vehicle is equipped with Savox IMP intercom, Metravib PILAR V sniper detection system, day/night 360° (TI) camera system for the crew and Flir / Proxy Dynamics PD-100 Black Hornet Personal Reconnaissance System (nano-UAV).

Expertise in cost-effective training solutions

Patria offers cost-effective training solutions for Patria AMV vehicle and Patria Nemo mortar systems. The company has expertise in the networking of several simulators. At DSEI Patria will also showcase Patria AMV Part Task Trainer networked with Patria Nemo Training Simulator.

Patria Nemo Training Simulator provides an authentic training environment for all firing procedures enabled by Patria Nemo. The simulator combines virtual training with actual Nemo hardware and software that is installed in a cabin simulating the Nemo commander's or gunner's position in the vehicle.

Patria AMV Part Task Trainer (PTT) combines virtual training environment and modelled AMV driver's position with all the essential driver's controls and systems. Training with AMV PTT familiarizes the trainee with the environment and functionality of the vehicle needed in operational AMV usage. Both training solutions are based on a high-quality Virtual Battle Space based synthetic environment which enables extensive networking possibilities.

Exhibitions

Avon Protection at DSEI 2017

The last decade has clearly demonstrated that the nature of threats to international security has changed significantly. Challenges such as terrorism, state and non-state sponsored chemical attacks and more recently nuclear proliferation have created an entirely new security environment.

Avon Protection, understand the threats we have today and what they mean for tomorrow. With our extensive knowledge of customer needs, Avon Protection's innovations are designed with the user in mind and engineered for the most extreme of environments.

For over 125 years Avon Protection have been at the forefront of supplying specialist respiratory protection devices and equipment to military forces, civil and first line defence troops, emergency services and industrial, marine, mineral and oil extraction site personnel. They all put their trust in Avon's products to shield them from every possible threat, whether air, land or sea based.

Leon Klapwijk, President, Avon Protection commented, "To meet the needs of our customers and ensure they remain protected to the continually evolving threat, Avon Protection has continued to strive to remain at the forefront of protection technology, not just delivering equipment but end user capability, something we are excited to the showcase at DSEI."

At DSEI Avon Protection will be displaying the AvonAir range; the first adaptive powered air system. Revolutionising the CBRN environment, AvonAir delivers user configurable modules, adaptable protection factor, increased time on task, reduced physiological burden and lowest cost of ownership, through the systems lifetime. AvonAir is built around three flexible and adaptable modules; EZAir, MP-PAPR and CS-PAPR.

Common to the range is Avon's intelligent EZAir blower motor, which automatically adjusts its flow rate, depending on the number of available filters and the system configuration.

In addition, on show will be the AM69, based on the proven FM53 specialist mask platform, the AM69 has been specifically developed to meet the unique requirements of aircrew wearers who require CBRN respiratory protection at all altitudes up to 40,000ft

(12,000m).

Avon Protection will also be displaying their new MCM100 military rebreather. The MCM100 is a fully closed circuit, electronically controlled, mixed gas rebreather CE tested to 100m, suitable for a large range of military or tactical diving disciplines such as Mine Countermeasure (MCM), Explosive Ordnance Disposal (EOD) shallow or deep, Mine Investigation and Exploitation (MIE) and Special Operations Forces (SOF).

Exhibitions

Rheinmetall at DSEI 2017

In Europe and around the world, armed forces and law enforcement agencies are modernizing their equipment in the face of new security threats. Seeking a robust and reliable partner, many turn to Rheinmetall. One of the world's leading systems makers, the high-tech specialist for mobility and security will be on hand at the DSEI defence show in London from 12 to 15 September.

Rheinmetall's longstanding main battle tank expertise forms a prime focus this year. This expertise extends from combat performance upgrades and modernization programmes to full-scale production as an original equipment manufacturer. Moreover, Rheinmetall is a global leader in the development and manufacture of state-of-the-art tank main armament and ammunition as well as simulation and training technology. Among other things, at DSEI Rheinmetall is displaying its future main battle tank advanced technology demonstrator (MBT ATD) as well as the DM11, the Group's state-of-the-art programmable multipurpose tank round, which is already in service with a number of NATO nations.

Moreover, the Boxer* is now returning to the United Kingdom, where it will be on display at the Rheinmetall stand (S7-110). The UK was an early partner in the industrial consortium that originally developed the Boxer Multi-Role Armoured Vehicle (MRAV). In the meantime, three NATO nations have opted for this versatile, well-protected, combat-proven family of vehicles. The Boxer has also demonstrated its outstanding operational effectiveness in comprehensive performance trials conducted by the Australian Defense Force. The Boxer is considered to be a promising contender in the British Army's Mechanised Infantry Vehicle (MIV) procurement programme.

Network-enabled operations form another prime focus. As a systems supplier, Rheinmetall specializes in incorporating soldiers, sensors, effectors, drones and tactical vehicles into highly effective "systems of systems".

In a joint venture with Rohde & Schwarz, Rheinmetall is competing as general contractor for two major Bundeswehr projects: MoTaKo (German military shorthand for "Mobile Taktische Kommunikation" or mobile tactical communication), and MoTIV, which stands for "Mobiler Taktischer Informationsverbund", or mobile tactical information network. The two projects will culminate in the German Army's future digital combat command system – "German Army 4.0", as it were.

At Rheinmetall's Stand S7-110, a MoTaKo/MoTIV command post brings additional troops, vehicles and components into the command-and-control loop via a mobile communication node, creating a common operational picture in a tactical scenario. Among others things, the items on display include:

- TacNet command system: The TacNet command system forms the nerve centre of networked systems. Flexible inclusion of additional troops, sensors, effectors or platforms is possible at all times.
- Soldier systems: Rheinmetall possesses comprehensive expertise in the world of soldier systems. Prominent examples are "Infanterist der Zukunft – Erweitertes System" (IdZ-ES; infantryman of the future – extended system) which is operational in the German Army as well as Argus which is under procurement by the Canadian Armed forces. The new soldier system Gladius 2.0 is debuting at this year's DSEI.
- RS556 assault rifle: The 5.56mm x 45 cal. modular multipurpose RS556* rifle is designed for maximum reliability and ease of use. It can also be equipped with an optional 40mm build-on RS40* grenade launcher.
- PanoView: "PanoView" is another example of Rheinmetall's approach to network-enabled warfare. This innovative system features sensors mounted on the outside of an armoured vehicle which transmit real-time images to goggles worn by the vehicle commander. In effect, the commander can see right through the armour, drastically improving situational awareness. Moreover, the system imports tactical situation data, e.g. marking the location of friendly and enemy elements on the ground. In addition, Panoview can be used to process virtual situation maps.
- Multi Mission Unmanned Ground Vehicle (MM UGV): Deployed in conjunction with infantry components, unmanned systems enable rapid reconnaissance and engagement. Rheinmetall's Multi Mission Unmanned Ground Vehicle features a modular design. This enables integration of different mission kits for a wide variety of different operational tasks: it can be configured as transport vehicle, a sensor platform for surveillance and monitoring, for example, or as a weapon carrier. Remote control and autonomous operation are both possible.
- Vehicle Systems: Rheinmetall also adds the infantry group's main weapons systems to the network, e.g. the Puma* infantry fighting vehicle and the Boxer* 8x8 wheeled armoured vehicle, configured for a combat role with the two-man

LANCE turret.

Rheinmetall's Vehicle Systems division is the Group's centre of excellence for products ranging from trucks to tactical wheeled vehicles and main battle tanks. Europe's foremost supplier of army systems maintains an extensive portfolio for tactical land mobility, exemplified by top-performing trucks like the TG and HX families, the Boxer* and Fuchs/Fox wheeled tactical vehicles, the Kodiak armoured engineering vehicle and the new medium-weight Lynx family of tracked combat vehicles. In addition to this, the Group's expertise in turret technology further enhances the portfolio. Examples here include the LANCE turret and the turret structure for the UK's Ajax reconnaissance vehicle. Besides the Boxer 8x8 wheeled combat vehicle Rheinmetall is showcasing an HX77 truck equipped with a protected cabin at DSEI.

Underscoring Rheinmetall's "Leadership in Cannon Design", the new Sea Snake-27 is a 27mm automatic cannon for maritime applications. Comprehensive force protection solutions for personnel and platforms, infantry fire control devices, laser light modules, ammunition concepts, advanced air defence concepts and simulation technology round out the array of Rheinmetall products on display at this year's DSEI. We look forward to welcoming you to our stand S7-110.

Exhibitions

Supacat launches HMT Light Weight Recovery in defence industry first for Light Weight (Air Portable) Recovery vehicle programme

The global defence industry's most versatile Light Weight Recovery (LWR) vehicle will be unveiled by UK high mobility vehicle specialist, Supacat, at DSEi in London. The 10.5 tonne HMT Light Weight Recovery (HMT LWR) has been developed by Supacat to fill a capability gap to recover vehicles operating in hard to access urban and rural locations as required by the UK MoD's Light Weight (Air Portable) Recovery Capability (LW(AP)RC) programme.

The 6Ч6 HMT LWR offers high levels of agility, off-road performance and protection in common with Supacat's High Mobility Transporter (HMT) family, which includes `Jackal` and `Coyote` now within UK MoD's Core Fleet. HMT LWR utilises many HMT design features such as the variable height air suspension system, engine and drive line that have been battle proven in numerous theatres. Blast and ballistic protection has been built into the chassis providing the optimum protection for its weight of 10.5 tonnes.

The vehicle is capable of wading through up to 1.5m of salt water, with an additional 0.5m of wave splash. This enables the vehicle to be deployed from landing craft. It can operate at -30 to +50 degrees.

HMT LWR utilises an innovative new Supacat designed technology, `Supalift` (patent pending), which extends the range of vehicles that can be recovered by a light weight recovery vehicle. HMT LWR's recovery system can be operated both in conventional mode and by the operator engaging `Supalift`, which increases the maximum lifting weight of the recovery system by over 50%. In conventional mode the HMT LWR recovery system lifts a maximum recovered vehicle axle mass of 3.8 tonnes and in `Supalift` mode rises to 6.1 tonnes (specification based on recovering an HMT 400 `Jackal 2`). `Supalift` technology is based on the principle of distributing the weight of the casualty vehicle more evenly over the recovery vehicle.

Phil Applegarth, Head of Supacat, said, "HMT LWR provides customers with a highly versatile and cost effective light weight recovery capability, with the flexibility to recover a wide range of vehicles. We are very proud of our engineering team in developing `Supalift`, which finally makes a light weight recovery vehicle a reality and is a game-changer in extending the lifting capability of recovery systems for defence and other industry sectors".

HMT LWR is fitted with a specially designed Boniface and Miller Century 2465 hamper and a Rotzler TR80 main winch. These will be fitted as standard but as with all HMT platforms the modular hamper design can be reconfigured to suit any role.

At last year's DVD show Supacat revealed the concept demonstrator for the LW(AP)RC programme as one of several new variants of the HMT platform. This has since been developed as HMT LWR to full prototype, which will be displayed on Supacat's DSEi stand N9-360.

"HMT LWR also demonstrates the flexibility of the HMT platform in being configurable to different roles to meet the needs of current and future programmes", said Phil Applegarth, Head of Supacat.

Exhibitions

Otokar to exhibit its ARMA 8x8 Armoured Vehicle and UCOK Turret System at DSEI 2017

Otokar, Turkey's largest privately owned defence company, made a strong appearance at DSEI, on September 12-15, 2017 in London. Otokar exhibited its own design armoured vehicle ARMA 8x8 and UCOK turret system.

Highlighting Otokar's success at global markets,

General Manager Serdar Gцrgьz stated "Our strength in the defence industry is driven by our experience, engineering and R&D capabilities, and successful use of technology. Apart from being the leading supplier of the Turkish Military and Security Forces for wheeled tactical vehicles, our military vehicles serve almost 50 different end users in over 30 countries. Today nearly 30,000 Otokar military vehicles are in service in many different parts of the world with an outstanding performance. I believe DSEI is a great opportunity to get together with our existing and potential users, listen to their requirements and seek for further opportunities to serve their future needs."

Stating that Otokar boasts a wide land defence systems product range from 4x4 to 8x8, from tracked armoured vehicles to turret systems, and is Turkey's largest privately owned defence company, Gцrgьz continued, "Our clients with Otokar vehicles in their inventories are references for new clients. This year, we have taken our exports one step further with the agreement in cooperation with Tawazun, the leading investment company in UAE. From now on, we will not only export products but also our innovation and technology capabilities."

ARMA: Modular 8x8 Armoured Vehicle

Otokar presents ARMA 8x8 in DSEI; the modular multi-wheeled vehicle with superior tactical and technical features. Thanks to its superior mobility, high mine and ballistic protection, medium and high caliber weapon system integration options; ARMA is capable to serve modern armies in the real battlefield, peace keeping and human relief operations in most difficult terrain and climatic conditions. ARMA 8x8; is available in various types of configurations such as Personnel Carrier, Infantry Fighting Vehicle, Fire Support Vehicle, Mortar Carrier, Short and Medium Range Air Defence, Mobile Gun Carrier, Command and Control Vehicle with optional amphibious capability. ARMA is suitable for integration of various weapon systems from light machine gun weapon stations up to 25-30 mm medium caliber cannon and 105 mm cannon.

UCOK Turret System

UCOK stabilized machine gun platform utilizes 12.7mm/7.62mm machine gun or 40mm automatic grenade launcher on the same platform. The weapon station has dual axes independently driven sight which accommodates a thermal camera, a CCD camera and a laser range finder. Independent driven sight allows the aiming reticle stay on the target even the super-elevation and lead angles are given to the weapon for accurate firing.

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Contracts

BAE Systems awards multimillion euro contract to Konstrukta in Slovak Republic

BAE Systems has contracted with Konstrukta, a leading defence company in the Slovak Republic that operates as an artillery system design house, to produce barrels for the Swedish Army's Mjцlner mortar system.

Konstrukta will produce 84 120-millimeter barrels to be modified as needed to meet the requirements for the Mjцlner system, which is being integrated on Swedish Army CV90 Infantry Fighting Vehicles. Deliveries will commence in December 2017, continuing through July 2020. The steel for the barrels will be supplied by ZTS Metalurg, a Slovak-based manufacturer.

BAE Systems has also established relationships with several Slovak companies to offer the Commander SK radar system, a high performance long- and medium-range mobile or semi-static three-dimensional air surveillance radar. This programme will deliver a modern capability to the Slovak armed forces and deliver significant value to Slovak industry.

"BAE Systems has a proven track record of partnering with local companies to not only meet the short-term needs of our customers, but to establish long-term, lasting relationships that develop new opportunities for growth and investment," said Tommy Gustafsson-Rask, vice president and general manager of BAE Systems Hдgglunds, the prime contractor for Mjцlner integration on the CV90s.

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Exhibitions

Meggitt Training Systems to exhibit at DSEI 2017

Suwanee, GA -- Meggitt Training Systems, the leading provider of integrated live-fire and virtual weapons training products and services for armed forces and law enforcement, will participate at Defence and Security Equipment International (DSEI) through the Georgia Department of Economic Development. The military and security industry event will be held September 12-15, 2017 at ExCeL in London, England.

"Today's threats necessitate maximum realism, despite stretched budgets, and that's what Meggitt provides to government and commercial customers globally," said Mark Mears, managing director at Meggitt Training Systems, Ltd. "Although proudly based in Georgia, Meggitt Training Systems is part of Meggitt PLC, a UK-headquartered corporation. As such, we particularly look forward to engaging with current and prospective customers at DSEI, the UK's largest defense and security trade show."

On the virtual side of the business, Meggitt Training Systems will highlight the FATS® 100MIL small arms training system. Leveraging key features and Program of

Record certification from the US Army Engagement Skills Trainer (EST II) and the US Marine Corps Indoor Simulated Marksmanship Trainers (ISMT), and now undergoing a three-month NATO product demonstration, the FATS 100MIL delivers a significant expansion in virtual small-arms training capability and is ideally positioned for direct and foreign military sales. It also builds on Meggitt's heritage delivering the FATS Dismounted Close Combat Trainer (DCCT), the UK Ministry of Defence's primary small-arms training system. More than 150 FATS DCCT systems have been delivered to the MOD since 2003.

Meggitt's live-fire offerings include infantry and armor targets, outdoor and indoor range solutions, target retrieval and training systems, shooting stalls, bullet traps, range control systems, as well as range planning and design.

Meggitt employs more than 400 people at its headquarters in Suwanee, Georgia, plus others in Canada, Europe, Asia, Australia and the Middle East. Its training solutions have been chosen as programs of record by the US Army and Marine Corps, as well as sold to military forces in Canada, United Kingdom, Australia and other allies. Meggitt not only facilitates training for the world's best warfighters, it also provides virtual and live-fire solutions for law enforcement agencies in more than 100 countries.

Defence Industry

IDE's WiSPR to upgrade German PzH2000 Communications

IDE (INTRACOM Defense Electronics) received a 4.1 million Euro order from Krauss Maffei Wegmann (KMW) for WiSPR intercommunication systems, in the frame of the PzH2000 retrofit program of the German Army.

This follows the successful completion of the prototype PzH2000 retrofit program, which was concluded in 2013, and where WiSPR proved once more its superior communications capabilities under significantly noise-burdened environments. WiSPR system deliveries for this program will be completed within May 2017.

WiSPR is a state-of-the-art digital intercommunication system with leading performance in vehicular noise reduction and de-centralized system architecture, capable of adapting to different operational requirements. The system is designed and produced by IDE and it is characterized by reliability, ergonomy, and reduced logistics footprint.

IDE's CEO, Dr. George Troullinos, stated: "We are very pleased by the continued international recognition of our products from quality driven users, which motivates us to further invest in leading edge technologies".

Defence Industry

WiSPR Supply for BOXER Infantry Fighting Vehicle

IDE (INTRACOM Defense Electronics) signed a 2.0 Million Euro contract with Krauss-Maffei Wegmann (KMW) for the supply of WiSPR Intercommunication Systems to equip the BOXER Infantry Fighting Vehicle for the international market. WiSPR system deliveries are planned to be completed in 24 months.

BOXER is a new generation, advanced Multi-Role Armored Vehicle (MRAV), which provides increased crew protection, modularity and mobility, adopting the latest technologies for its operational performance.

WiSPR is a state-of-the-art digital intercommunication system for military vehicles and renowned for its leading performance in vehicular noise reduction, crew safety and versatile system architecture, adaptable to a variety of operational requirements of the contemporary digital battlefield.

Future Technologies

Leonardo-Led Team To Demo 'ACTIVE Armour' To Protect British Army Vehicles And Their Crews Against Current And Future Weapons

Leonardo has been selected by the UK Government's Defence Science and Technology

Laboratory (Dstl) to lead a team of UK companies in work that will help protect British Army vehicles against current and future weapons.

Under a Technology Demonstrator Programme (TDP) called 'Icarus', the team will develop and demonstrate a way to affordably integrate 'best of breed' technologies in a category known as 'Active Protection Systems' (APS), preparing them for deployment across the Army's fleet of land vehicles.

Part of the TDP will see the Leonardo team demonstrate and evaluate an operational prototype against 'live fire' weapon engagements. Team members working with Leonardo to deliver the Icarus TDP are BAE Systems, Lockheed Martin UK, Ultra Electronics, Frazer-Nash, Brighton University, Abstract Solutions, Roke Manor Research and SCISYS. The project is responding to an operational environment where armour by itself will not be sufficient to defend against the capabilities of future weapon systems, in particular threats such as Rocket Propelled Grenades (RPGs) and Anti-Tank Guided Weapons (ATGW). In order to counter this growing threat, a number of Active Protection Systems (APS) technologies have been developed by industry and are available as off-the-shelf solutions to supplement the physical protection that isoffered by an armoured vehicle. These APS technologies generally fall into either of two categories: 'soft' APS solutions that are focused on early threat detection and which attempt todisrupt, decoy or spoof the incoming threat and 'hard' APS systems that seek to defeat the incoming weapon system by physically intecepting it, known in military terminology as a 'kinetic effect'.

Whilst these APS technologies are currently available and will continue to be developed by industry, it is clear that no single solution is suited to every threat scenario or indeed all threats.

The key challenge is to be able to rapidly and affordably tailor a vehicle's combination of APS technologies to optimise survivability prior to, or during, deployment.

Against this backdrop, the primary objective of the Icarus TDP is to develop and demonstrate a UK sovereign Modular, Integrated Protection System (MIPS) Electronic Architecture (EA) that enables "best of breed" APS sensors and countermeasures to be selected, integrated and deployed as necessary to defeat a wide range of current and future battlefield weapon threats. Not only must the architecture be easy to use, it must also be affordable and dependable and ultimately form the basis of a new MIPS defence standard, similar in principle to that which has been developed for the UK Generic Vehicle Architecture (GVA) standard.

In order to deliver maximum value for money from the TDP, Leonardo has assembled a team that brings together a range of UK experts in their respective fields as well as representation from UK academia that can draw upon previous UK investment in related technical areas. Under the Icarus TDP, in conjunction with Dstl, the Leonardo team will establish and cultivate an industry APS Community of Interest (CoI). A key objective of this CoI initiative will encourage engagement across industry to help ensure the very best APS technologies available – now and in the future – are considered in the MIPS EA.

Under the related Dstl Common Defensive Aids System (CDAS) programme, Leonardo has and continues to undertake similar APS integration activities for the UK helicopter fleet. Both the CDAS and Icarus programmes build on decades of experience in the provision of integrated Defensive Aid Suite (DAS) solutions and protection systems to both the UK and allied armed forces. Current examples of DAS provided by Leonardo include the systems which protect the UK's AW159 Wildcat, Apache, Puma, Chinook and Merlin helicopters, all of which bring together a collection of sensors and protective equipment into a comprehensive defensive suite. The company also leads the EuroDASS consortium, which provides the Praetorian defensive aids sub system (DASS) for the Eurofighter Typhoon.

About Dstl

The Defence Science and Technology Laboratory (Dstl) maximises the impact of science and technology (S&T) for the defence and security of the UK, supplying sensitive and specialist S&T services for the Ministry of Defence (MOD) and wider government. Dstl is an Executive Agency of the MOD, run along commercial lines. It is one of the principal government organisations dedicated to S&T in the defence and security field, with four sites; at Porton Down, near Salisbury, Portsdown West, near Portsmouth, Fort Halstead, near Sevenoaks and Alverstoke near Gosport. Dstl works with a wide range of partners and suppliers in industry, in academia and overseas.

Robots

BAE Systems` new Unmanned Ground Vehicle takes on dangerous jobs

On display at DSEI this year, Ironclad™ is a new Unmanned Ground Vehicle (UGV) designed to take on some of the most dangerous jobs that soldiers currently face.

Ironclad is small enough to negotiate tight urban environments, but maintains the mobility needed to handle extreme cross-country terrain. It can also be fitted to carry out reconnaissance, combat and casualty evacuation roles.

Craig Fennell, Future Programmes Director at BAE Systems Land (UK) explained: "Ironclad has a unique set

of capabilities for a UGV. Using high endurance battery power, it offers near silent running up to a 50km range and will come with a set of mission systems that can be quickly changed in the field. A modular connection system allows two vehicles to be connected together to handle additional loads, such as a specialised stretcher. It is also protected against blast and small arms fire to increase mission survivability."

"The next step is for Ironclad to act autonomously as part of a battlegroup, interacting with other vehicles and ground troops to follow mission objectives. This is being tested on existing vehicles as the technology – already at a high state of readiness – is developed."

Each Ironclad is built with a hardware interface that allows the different mission fits to be attached easily. This connection supplies both power and command from the main vehicle chassis, which houses the battery and a two-way remote control unit. The chassis is designed so that hardware needed for autonomous capability can be added at a later stage.

Mission fits currently in development

- Reconnaissance – imaging and audio streamed directly back to soldiers. Ideal for exploring hazardous environments before putting boots on the ground.
- Casualty evacuation – stretcher attachment for transporting wounded soldiers away from battlefield. Each UGV frees up two soldiers who would otherwise be needed to carry the casualty.
- Area denial – remote weapon station combined with imaging and audio sensors allowing soldiers to project force at a distance.
- Explosive ordnance disposal – similar to existing bomb disposal robots, but with the flexibility to change roles.

Craig Fennell summarised what Ironclad offers: "Ironclad – while being a product in its own right – is also a step towards the battlefield of the future where we expect fleets of unmanned air and ground vehicles to work together, sharing situational awareness and pursuing combat objectives. There will always be a human in the loop, but increasing use of autonomy and unmanned vehicles means they can focus on key decisions and have more options to avoid putting people in dangerous situations."

Defence Industry

Team Challenger® 2 offers a future-ready Main Battle Tank

Nine months into the Challenger 2 Life Extension Project (LEP) Assessment Phase, Team Challenger 2 has set out some of the improvements it will provide British Army tank crews.

Simon Jackson, BAE Systems' campaign lead explained: "We will be giving the Royal Armoured Corps a Challenger 2 Mark 2, customised for the British soldier with the latest and best sensors, weapons control systems and crewstations. When a crew climbs into the Challenger 2 Mark 2, the first thing they will see is a brand new, modern Commander's crewstation designed specifically for the British Army. All systems - including lethality, sighting, situational awareness, battlefield management and survivability - will be run and managed from this integrated crewstation."

"A modern electronic and video architecture backbone underpinning all vehicle systems will enable the Commander to transfer tasks to other crew members, such as the control and viewing of additional sensors and systems. Crew menus and displays will be more intuitive and have the same functionality as AJAX - making it much easier for Commanders to move between Challenger 2 and AJAX and vice versa."

"New control panels, the latest hand controllers and intelligent flat panel displays will give an instant feel of a more modern vehicle with major improvements. We will provide improved survivability measures, a better hit probability, faster targeting and vastly improved sighting systems."

Using an Open Architecture approach means that future upgrades will be incorporated more easily. Team Challenger 2 is ensuring that the tank is ready to receive further capability enhancements such as active protection systems, future electronic countermeasures, training systems and enhanced decision support systems.

There are also opportunities to make Challenger 2 forward-compatible with other emerging technologies. By following the UK Ministry of Defence (MOD) Open Architecture approach, the newly updated tank will be capable of operating with unmanned ground and aerial vehicles, and potentially autonomous vehicles. This could mean sharing situational awareness and even coordinating attack or defence with multiple unmanned weapon systems.

Simon explained: "Our focus is to offer a solution that meets exactly what the British Army needs and what the MOD has asked for – keeping the tank in service until 2035 in the most effective and efficient way possible. But we also want to customise what is already a great tank to give soldiers a significantly better vehicle; one that can easily receive further updates as the battlefield demands, all delivered within the available budget."

In addition, Team Challenger 2 will offer option packages to enhance protection and lethality. These will include soft and hard kill defensive aids systems, modular armour and a choice of weapon upgrades.

Exhibitions

Cobham Launches New Integrated Communications Products

Cobham announced that they have launched a new Integrated Communications Environment (ICE) product range which provides major improvements to existing communications systems on platforms. The new ICE products include a multi-radio interference cancellation system and new high-performance multi-port V/UHF antenna.

The integration of multiple radios and other communications systems on a single platform or in a congested environment causes Radio Frequency (RF) interference which can dramatically reduce the effective radio range. This increasingly operational problem is being exacerbated by the increase of on-board communications systems which can mean they are competing for data and spectrum allocation.

David Bulley, VP and General Manager of Cobham Antenna Systems said "Cobham has been at the forefront of RF interference cancellation technologies for over 20 years with proven field performance. As communications systems on platforms have become increasingly complex our expectations of them has also heightened; Cobham's new ICE products allow users to streamline their communications systems without affecting performance or range which makes a critical difference during operations."

The ICE 7201 interference cancellation system not only restores radio performance and operational range, it also facilitates enhanced frequency planning for operations, enabling closer separation between channels resulting in a significantly greater number of useable radio channels for a given spectrum allocation. Simultaneously, the GD2049 high performance multi-port V/UHF antenna enables the overall antenna count on land platforms to be reduced through the introduction of two VHF ports with high port-to-port isolation.

The combination of Cobham's two new market-leading technologies allows for optimised co-site integration of radios whilst also reducing the number of antennas required on a platform. The result is a significantly improved communication effectiveness and a reduction in the cost and 'real estate' of the antennas required.

The new ICE 7201 system and GD2049 antenna exhibited on the Cobham stand, S6-150, at DSEI London, 12-15 September 2017.

About Cobham Antenna Systems

Providing peace of mind with resilient data transmission solutions for mission critical operations.

Cobham is a market-leading supplier of advanced, ultra-reliable integrated systems for avionics, radar, surveillance and Satcom applications.

Through continual innovation Cobham is able to supply highly resilient, totally dependable solutions with low through-life costs that deliver outstanding performance and outstanding value.

Defence Industry

Rockwell Collins Launches NavHub Navigation System with German Armed Forces

Enlarge image - Rockwell Collins Launches NavHub Navigation System with German Armed Forces

enlarge image click to enlarge

The German Ministry of Defense selected Rockwell Collins' NavHub navigation system to provide Global Navigation Satellite System (GNSS) availability to a variety of its military vehicles.

The NavHub system serves as a next-generation GNSS- and Military-Code (M-Code)-enabled solution for the German Armed Forces. Customizable for ground and maritime platforms, NavHub provides a variety of vehicle interfaces, meets the standards required by military vehicle operators, and allows users to receive data from multiple secure and open-service GNSS constellations to simultaneously confirm the navigational solution. Access to multi-constellation GNSS and GPS M-Code will provide a significantly enhanced navigational solution over the current GPS-only solution.

"NavHub meets the critical mission need for accurate navigation support for fast-moving platforms and challenging environments," said Claude Alber, vice president and managing director, Europe, Middle East and Africa for Rockwell Collins. "Our military GNSS receivers will provide significantly enhanced navigational capabilities to military vehicles and will mitigate terrain, forest and urban degradation as it will raise the number of satellites used from 28 to well over 100."

Work under the contract will be performed in Rockwell Collins' facilities in in Europe.

Robots

Defence Secretary announces J55m contract for UK bomb disposal robots at DSEI

Defence Secretary Sir Michael Fallon has announced a contract worth up to J55 million for 56 innovative bomb disposal robots at the Defence and Security Equipment International (DSEI) Exhibition in London this morning.

Following an initial J4 million demonstration phase, the robots will be purchased from US robotics manufacturer Harris under the MOD's Project Starter for use by the British Army, and will be supported by engineers at Harris EDO MBM Technology in Brighton, where the contract will sustain 10 highly-skilled jobs.

In a keynote speech, the Defence Secretary outlined how the Harris T7 robots use 'advanced haptic feedback' to allow operators to 'feel' their way through the intricate process of disarming from a safe distance, protecting UK personnel from threats such as roadside bombs.

Defence Secretary Sir Michael Fallon said: «With our rising defence budget, we are investing in the latest equipment for our Armed Forces to tackle the growing threats we face. These state-of-the-art bomb disposal robots will be powerful and reliable companions to our troops on the battlefield, keeping them safe so they can help keep us safe.»

Equipped with high-definition cameras, lightning-fast datalinks, an adjustable manipulation arm and tough all-terrain treads, the robots are able to neutralise a wide range of threats.

The haptic feedback function is designed to provide operators with human-like dexterity while they operate the robot's arm using the remote control handgrip. The unit gives the operator physical feedback, allowing intuitive detailed control.

The announcement comes after a competition between the world's leading manufacturers, organised by the MOD, with the new fleet replacing the current Wheelbarrow Mk8b. All 56 robots are due to be delivered to the UK and in service by December 2020.

Chief Executive Officer for Defence Equipment and Support, the MOD's procurement organisation, Tony Douglas said: «This contract has been designed to deliver future-proof, world-leading technology at the best value to the taxpayer. Innovation is central not only to the success of this remarkable system, but also to the relationships across DE&S, Industry and the frontline commands which allowed this agreement to be reached.»

With 141 international delegates from 60 countries, DSEI showcases British business and innovation across security and defence. The Defence Secretary toured the exhibition and announced the latest investment in advanced equipment for the UK's Armed Forces.

In addition to new bomb disposal robots, the Defence Secretary announced that UK personnel will be protected by a new lightning-fast protection system under development by the Defence Science and Technology Laboratory (Dstl). The new 'Icarus' system, involving a consortium led by Leonardo, will be able to detect and defeat threats to armoured vehicles within 100 milliseconds: many times faster than a human could respond.

The proof of concept Technical Demonstrator Programme is worth J10 million to the UK economy and will develop system sensors and countermeasures to defeat a wide range of current and future battlefield threats such as Rocket Propelled Grenades and Anti-Tank Guided Weapons, helping to protect the lives of the UK Armed Forces.

The Demonstrator Programme will initially secure 45 jobs across the UK and has the potential to create up to 250 jobs if the system is eventually deployed.

The Defence Secretary also pointed out that, for the first time, a full-scale model of the UK's future laser turret will be on display at DSEI. In January 2017 the MOD awarded a J30 million contract to the MBDA-led Dragonfire consortium, to demonstrate the potential of Laser Directed Energy Weapons. The demonstrator will be tested on UK ranges from 2018 with in-service capability planned by the end of the 2020s.

Following Minister for Defence Procurement Harriet Baldwin's announcement of the successful first firings at sea of the Royal Navy's new Sea Ceptor system last week, the Defence Secretary also pointed out that the British Army is showcasing the new Land Ceptor air defence system launcher at DSEI. Developed by MBDA, Land Ceptor will replace the Army's Rapier system as part of the new Sky Sabre capability.

The Innovation Initiative and J800m Defence Innovation Fund aim to transform Defence to encourage imagination, ingenuity and entrepreneurship. From laser weapons to autonomous vehicles, the MOD is working with small firms, academics, industry, and the new Defence Advisory Panel to find Twenty-first century solutions to defence challenges.

Robots

FN Herstal and Milrem Robotics Exhibit a Weaponized Unmanned Warfare System at DSEI

One of the leading firearms and weapon systems manufacturer FN Herstal and defence solutions provider Milrem Robotics are introducing their first joint product, a weaponized unmanned warfare system, at DSEI 2017.

This system features the THeMIS unmanned ground vehicle by Milrem and the deFNder® remote weapon station by FN Herstal. The joint product has strong advantages in providing fire support and acting as a force

multiplier for warfighters.

The system has already been deployed with positive results at the largest Estonian military exercise Spring Storm 2017. The two companies will continue their R&D efforts later this year.

“Weaponized robotic systems are the next generation of warfare that will provide a new level of fire power and most importantly keep our soldiers in a safe distance,” said Kuldar Vддrsi, the CEO of Milrem Robotics. “And I am not talking about AI driven systems but remotely controlled solutions where human operators make all the important decisions,” he added.

"The combined solution of deFNder® Medium and THeMIS, merging the technologies and expertise of our two companies, illustrates the potential of the concept," said Vincent Verleye, COO of FN Herstal. "The value added of such a weaponized robotic system is self-explanatory," he added.

The tracked diesel-electric THeMIS UGV is intended to provide support for dismounted troops even on very harsh terrains and in difficult conditions. It offers 10 hours of work time with one full tank that can be topped up anytime. The system has a payload of at least 750 kg /1650 lbs.

Unlike competing systems the THeMIS is a multi-mission system that can be equipped with several different superstructures including IED detection and disposal systems, small and large calibre weapons and also tethered and non-tethered drones.

Exhibitions

New X-2 Platform and Control System to be launched at DSEI 2017

HINCKLEY, UK. September 1st 2017. Digital Concepts Engineering is launching the X-2 Unmanned Ground Vehicle fitted with the Marionette control system at DSEI. Exhibited as a CBRN (Chemical, Biological, Radiological and Nuclear) detection platform it is also well suited to EOD, Search & Rescue, Perimeter patrol, communications relay, mine detection and clearing, light weapon mount and load moving tasks and is capable of manual or autonomous operation. The platform is based on the successful IBEX autonomous robotic system.

X-2 is fitted with Marionette, a modular, low-latency control system which can be scaled to meet a wide variety of customer requirements and has already been integrated into a number of platforms, both wheeled and tracked from 20kg to 4.5 tonnes across military, agricultural, nuclear and civil applications including the Wheelbarrow EOD range of vehicles and the Sellafield First Response Vehicle.

“The X-2 is built to tackle extreme terrain whilst carrying or towing heavy loads” explains Ed Gummow, Director of Digital Concepts Engineering. “The chassis is based on our agricultural IBEX robot with an upgraded control system that gives us high-grade communications, video multiplexing, advanced sensor interfaces and more. It’s a military system at an agricultural price.”

Exhibitions

General Dynamics Land Systems–UK showcases PIRANHA 5 at DSEI

ExCeL Exhibition Centre, London – At Defence and Security Equipment International (DSEI), General Dynamics Land Systems–UK and General Dynamics European Land Systems are showcasing PIRANHA 5, General Dynamics’ 8x8 platform that is a candidate for the British Army’s Mechanised Infantry Vehicle (MIV) Programme.

PIRANHA 5 is a highly mobile and protected platform with a payload of over 13 tonnes, providing significant growth potential throughout the life of the platform. It is modular by design and can be reconfigured quickly to accomplish a wide-range of mission objectives.

General Dynamics Land Systems–UK will demonstrate PIRANHA 5’s innovations in electronic architectures, mobility and protection. It has proven its success in competitive trials around the world, and has been selected by Denmark and Spain for the modernisation of their Armed Forces. PIRANHA 5 is currently in production for the Danish Army.

Kevin Connell, vice president of General Dynamics Land Systems–UK, said: "The PIRANHA family of vehicles are highly reliable and in active service with Armed Forces worldwide. We can deliver PIRANHA 5 vehicles quickly to the British Army to meet the planned Initial Operating Capability for the MIV programme from an existing production line, before transferring production to our Merthyr Tydfil facility in South Wales, creating significant employment right across our extensive UK supply chain. PIRANHA 5 is the best-value-for-money solution to the British Army's MIV requirement, supporting British industry and jobs."

General Dynamics Land Systems has a long pedigree and worldwide experience in delivering tracked and wheeled military vehicles, alongside specialist knowledge in complex, scalable electronic architectures. It delivers, amongst others, AJAX, the Abrams main battle tank, LAV (Light Armoured Vehicle) and Stryker Family of Vehicles, and the Cougar Mine Resistant Ambush – Protected (MRAP).

Exhibitions

General Dynamics Land Systems–UK Showcases EAGLE Platform Ahead of MRV-P Programme Trials

ExCeL Exhibition Centre, London – General Dynamics Land Systems–UK and General Dynamics European Land Systems are showcasing the EAGLE 6x6, which will enter trials shortly for a part of the UK's Multi Role Vehicle – Protected (MRV-P) programme, at Defence and Security Equipment International (DSEI).

EAGLE, fitted as an ambulance variant at DSEI 2017, provides a unique suspension and driveline, offering superior tactical mobility, reliability and the highest-protection in its class. The EAGLE is in-service with the German, Swiss and Danish Armies. It is available in a range of 4Ч4 and 6Ч6 configurations and can fulfill roles such as a Troop Carrier, Recovery, Command, Reconnaissance and Logistics. EAGLE provides logistic commonality across its range of variants to offer lower maintenance and lifecycle costs.

An Ambulance and a Troop Carrying vehicle, based on the same EAGLE 6x6 chassis and driveline, are being provided for trials. A third platform will be used for a mine blast trial. Trials will begin in October 2017 and are planned to run until February 2018.

Kevin Connell, vice president of General Dynamics Land Systems–UK, said: "General Dynamics Land Systems has extensive experience of delivering world-leading platforms around the world. The EAGLE 6x6 is an excellent example of a high performance, highly survivable, tactical wheeled vehicle ideally suited to troop transport and the rapid, safe carriage of injured personnel. By undertaking the Assembly, Integration and Test of EAGLE platforms for the British Army, alongside in-service support, at our new Merthyr Tydfil facility, there would be an opportunity to create significant employment right across our extensive UK supply chain. Our proven processes and vehicle manufacturing pedigree will ensure MRV-P is delivered on-time and on-budget."

General Dynamics Land Systems has a long pedigree and worldwide experience in delivering tracked and wheeled military vehicles, alongside specialist knowledge in complex, scalable Electronic Architectures. It delivers, amongst others, AJAX, the Abrams main battle tank, PIRANHA, and LAV (Light Armoured Vehicle), Stryker and Cougar MRAP (Mine Resistant Ambush – Protected) families of vehicles.

Training And Simulators

General Dynamics Land Systems–UK Will Deliver Innovative State-of-the-art Training Solutions for the AJAX Programme

ExCeL Exhibition Centre, London -- General Dynamics Land Systems–UK will deliver a comprehensive state-of-the-art training solutions package for the British Army as part of the AJAX programme. These solutions, in particular the immersive Crew Turret Trainer (CTT) and the AJAX Desk Top Trainer (DTT) are showcased at Defence and Security Equipment International (DSEI).

Alongside the delivery of 589 AJAX platforms to the British Army, General Dynamics Land Systems–UK will supply a range of training solutions that maximise the use of simulation to reduce cost of ownership and burden on live platforms.

The training solutions will cover Gunnery and Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR), Driver Procedure and Maintenance, and Level 2/3 Maintenance. Initially, these training solutions will support 'Train the Trainer' activities before supporting Conversion and Steady State courses by the British Army.

Key elements of the training solutions being delivered include:

- Crew Turret Trainer (CTT): Developed by Lockheed Martin UK, in partnership with General Dynamics Land Systems–UK, the CTT is self-contained within a 20-foot ISO container and includes a representative AJAX turret, which will replicate its systems and their functionality within a static, physical environment. All sensor views are simulated and the crews will operate in an immersive synthetic environment. The CTT

consolidates classroom-based training in an environment that reflects the experience of the real vehicle. The first CTT is showcased on the General Dynamics stand at DSEI.

- Full Motion Driver Training Simulator (FMDTS): Developed by XPI, in partnership with General Dynamics Land Systems–UK, the FMDTS is a classroom-based, full-motion, 6 Degrees of Freedom (6DoF), fully-immersive driver simulator. The trainee drivers will be able to experience the full performance of driving AJAX over different types of terrain and in different scenarios.
- Maintenance Trainer Electrical (MTE) – Hull and Turret: Developed by Pennant Training Solutions, in partnership with General Dynamics Land Systems–UK, the MTE is a workshop-based trainer, which will support the training of British Army soldiers in the conduct of L2/3 maintenance on AJAX platforms.

Kevin Connell, vice president of General Dynamics Land Systems–UK, said: "In partnership with our UK-based supply chain, General Dynamics Land Systems–UK is delivering an innovative suite of fully-immersive training solutions to the British Army in a cost-effective manner. This training enables the British Army to maximise the use of the first fully-digitised fleet of vehicles across all environments on future operations."

The range of AJAX variants will allow British Army 'Strike Brigades' 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.

Defence Industry

General Dynamics Land Systems–UK begins AJAX Manned Live Firing Phase of Programme, Using CTAI 40mm Cannon

ExCeL Exhibition Centre, London -- General Dynamics Land Systems–UK has begun the industry manned live firing phase of the AJAX programme, with the CTA International 40mm (CT40) cannon.

The five-month trial, which started in early September and takes place at ranges in West Wales, will test the CT40 cannon, Chain Gun and Smoke Grenade Launchers.

AJAX is fitted with instrumentation to record all aspects of the firing of the CT40 cannon and Chain Gun, including lethality performance. Testing will progress from a static vehicle firing on a static target, to a moving vehicle firing on a moving target. The testing is being conducted by General Dynamics Land Systems–UK, the turret developer (Lockheed Martin UK), and with the Ministry of Defence observing.

Over the last 18 months, General Dynamics Land Systems–UK has completed significant unmanned firing of the CT40 cannon and Chain Gun, which provided the assurance needed to begin the manned firing phase of the programme.

Defence Minister Harriett Baldwin said: "The AJAX programme is sustaining hundreds of jobs in Wales, as well as thousands right across the UK, and a lot of hard work has gone into reaching this manned live firing phase."

Kevin Connell, vice president of General Dynamics Land Systems–UK, said: "The start of the CT40 cannon manned industry firing phase is a significant milestone in the AJAX programme. This cutting-edge capability that enables AJAX to pack a significant punch, alongside its wide-range of best-in-class sensors that makes it an Information Age platform, ensures that the British Army has everything they need to do their job effectively."

In recent months, General Dynamics Land Systems–UK has successfully completed a broad spectrum of AJAX programme trials across its different prototype platforms. These include altitude-climatic trials, air deployability trials, littoral fording trials and driver training trials.

The range of AJAX variants will allow British Army 'Strike Brigades' 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.

Contracts

U.S. Marine Corps Awards Contract For Additional Polaris® MRZR® D Utility Task Vehicles

Minneapolis -- The United States Marine Corps has ordered additional diesel MRZR® (MRZR D) Utility Task Vehicles (UTV) from Polaris Government and Defense to enhance Marine Corps operational capabilities. This follows the successful delivery and fielding of MRZR UTVs to Marine Corps infantry regiments earlier this year. Delivery of the more than 100 vehicles is scheduled to be completed by the end of the year.

"MRZR Ds support requirements in the Marine Corps for an internally transportable vehicle that is highly mobile and modular," said Joaquin Salas, manager, Polaris Government and Defense. "Marines can quickly configure the lightweight and open-concept MRZR D depending on the required mission."

The innovative nature and commercial expertise at Polaris translates to affordable military vehicles that provide superior mobility and advanced off-road technology. The MRZR D is a highly capable, low-cost mobility solution for the Marine Corps that lightens the load and improves agility across the force. It is readily available to individual units and other services for purchase on GSA and other contracting mechanisms.

"The two- and four-seat MRZR Ds can be quickly internally transported by V-22 and larger helicopters, allowing the vehicles to support Marine forces in almost any location. It is a significant advantage to have that mobility and support at the most tactical level," added Salas.

MRZRs have redefined ultralight, off-road mobility for military vehicles and are mission critical for expeditionary forces in the U.S. and more than 25 allied countries to meet current and future mission demands and threats. And because MRZRs are in service throughout the world, there is a high degree of interoperability and commonality among U.S. and allied forces. The MRZR platform is flexible and modular to support uses ranging from rapid personnel deployment, to command and control, casualty evacuation and supply transport missions. The vehicles are proven, affordable, reliable and easily maintained throughout the lifecycle with a commercial supply chain and the Polaris global network.

Defence Industry

U.S. Marine Corps Advances SAIC to Next Phase of AAV SU Production

RESTON, Va.--The U.S. Marine Corps Program Executive Officer Land Systems (PEO LS) approved the Assault Amphibious Vehicle (AAV) Survivability Upgrade (SU) program to enter into the Production and Deployment Phase following a Milestone C decision. As a part of the decision Science Applications International Corp. SAIC was awarded an initial Low Rate Initial Production (LRIP) option to provide the Marine Corps additional AAV SU vehicles. As part of the LRIP decision, SAIC will deliver a total of 25 vehicles over a two-year period for operational test and evaluation and initial fielding to USMC expeditionary units.

"SAIC is pleased to be moving into the LRIP phase for the AAV SU program and to begin delivering these important survivability and mobility enhancements out into the fleet and into the hands of our Marines," said Tom Watson, SAIC senior vice president and general manager of the Navy and Marine Corps Customer Group.

These vehicles are in addition to 10 AAV SUs prototypes that were delivered during the engineering and manufacturing development (EMD) phase. During the EMD phase, SAIC's AAV SUs completed rigorous development testing required by the USMC.

Under the contract, SAIC is required to upgrade personnel-variant (P7) vehicles and command and control-variant (C7) vehicles as part of an engineering design effort. SAIC received orders for 22 AAV SU P7 variant vehicles and three C7 variant vehicles. The LRIP phase is valued at approximately $145 million, if all options are exercised.

Robots

Endeavor Robotics Wins Its Third Major Contract In Six Weeks With The United States Government

Chelmsford, Mass. -- Endeavor Robotics, the U.S.-based global leader in tactical ground robotics, has been awarded a contract for 75 FirstLook robots from the United States Government for immediate operational use. This marks the company's third major contract win in the past six weeks.

FirstLook robots are widely fielded worldwide across multiple sectors, including military, law enforcement and the energy industry. The five-pound 'throwable' robot can be dropped 15-feet onto concrete without sustaining injury. The day/night cameras and two-way audio provide the user with immediate awareness of their surroundings. FirstLooks are often used in assessing dangerous situations, clearing buildings, and detecting IEDs. The robots can climb up to seven inches and can 'self-right' when flipped over.

The remote controlled FirstLook acts as 'eyes and ears' allowing the human operator to increase their stand-off distance from potential threats. To view the FirstLook in motion visit here.

"FirstLook is the most preferred lightweight reconnaissance robot in its class because of how easily and quickly it can be deployed while withstanding the

abuse of ground operations," says Tom Frost, Endeavor Robotics President. "It gives me great pride to know that we are doing our part each and every day to reduce human exposure to potentially lethal situations."

Robots

Team Polaris® Stands Out in Army SMET Program

MINNEAPOLIS and ALBUQUERQUE, N.M. -- Polaris Industries Inc., Applied Research Associates Inc. (ARA) and Neya Systems LLC have teamed to provide the U.S. Army with an elite platform for the Squad Multipurpose Equipment Transport (SMET) program: the Team Polaris MRZR® X, that will evolve squad mobility with advanced unmanned systems technology from ARA and the pioneering and unsurpassed autonomous systems behavior of Neya Systems.

"The MRZR X provides a modular, multi-mission platform for the U.S. Army's SMET program to provide squad overmatch, no matter what the mission. It is based on the very familiar Polaris MRZR platform – and creates an optionally manned platform," said John Olson, PhD, vice president and general manager of Polaris Government and Defense. "Off-road autonomy is challenging, but no one does off-road better than Polaris. And absolutely no one does off-road robotics and autonomy better than ARA and Neya Systems."

The modular MRZR is a prolific and preferred platform among infantry units in the U.S. and more than 25 allied countries, which helps make its integration and the transition from manned to unmanned vehicles easier for the Army and the soldier. The MRZR X maintains the same mission profile the Army is accustomed to, with additional capabilities for the soldiers that exceed SMET base requirements.

ARA is an employee-owned scientific research and engineering company that acquired Neya Systems earlier this year. Neya Systems is known for their development of unmanned systems for defense, homeland security, and commercial users. Neya Systems staff, under the continued leadership of Parag Batavia, PhD, have been recognized worldwide for their contributions in advanced unmanned systems technology, including Batavia's development of open architecture used universally by the Department of Defense.

"With the combined skills and expertise of Neya Systems and ARA, we're able to bring world-class robotic solutions to Team Polaris to provide the U.S. soldier with advanced capabilities, a lightened physical load, and increased situational awareness to equip them for the multi-domain battlefield," says ARA's President and CEO, Rob Sues, PhD.

Contracts

104 German Leopard 2 MBTs to be modernized

Rheinmetall will soon be modernizing part of the Bundeswehr's fleet of Leopard main battle tanks, implementing a comprehensive array of upgrade measures. The Dьsseldorf-based technology group for mobility and security will be responsible for key parts of a combat performance upgrade programme that will bring 104 Leopard 2 tanks up to state-of-the-art design status. Coupled with additional services, the modernization package is worth a total of €118 million. The first serially retrofitted Leopard 2 A7V tanks will reach the Bundeswehr starting in 2020.

Rheinmetall will be transforming a total of 68 Leopard 2A4, 16 Leopard 2A6 and 20 Leopard 2A7 main battle tanks, bringing them up to A7V standard. In the process, Rheinmetall specialists will be eliminating obsolescent features in the fire control computers and control consoles as well as installing a new laser rangefinder and thermal imaging device.

In addition, Rheinmetall will be supplying the new L55A1 gun for the 68 Leopard 2A4 MBTs to be modernized. These tanks will therefore be able to fire the latest generation of armour-piercing ammunition in the upper pressure zone. All 104 Leopard 2A7V tanks will be capable of using Rheinmetall's new programmable DM11 multipurpose round.

The order underscores once again Rheinmetall's leading role in tank main armament design and electronic components for modern fighting vehicles.