

# Army Guide monthly

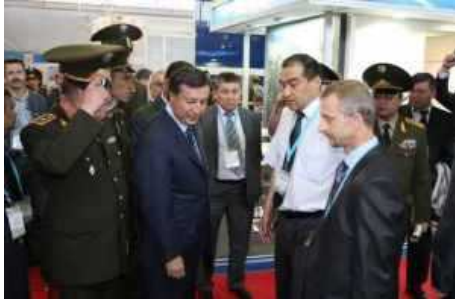


## # 6 (69) June 2010

- **AT Communication at KADEX 2010**
- **Mercedes-Benz to Celebrate Four Mercedes-Benz World Premieres at EUROSATORY 2010**
- **Lockheed Martin Wins JIEDDO Task Orders**
- **Textron to Deliver 80 Armored Vehicles to Iraqi Federal Police**
- **Navistar Defense and TATRA Team for Canadian SMP Program**
- **Oshkosh Defense to Produce New M-ATV SOCOM Variant**
- **China develops second generation explosive-removing robot**
- **Thales Canada and DEW Team to Provide Bushmaster for TAPV**
- **UK MoD invites Supacat to tender all-new, all-British Supacat Protected Vehicle (SPV) 400 for LPPV Programme**
- **General Dynamics Awarded \$92 Million for Weapon Stations**
- **US Army Testing Rugged, Autonomous Robot Vehicle**
- **BAE Systems and DEW Engineering Team for Key Canadian Program**
- **The FN SCAR Reaches FINAL Milestone**
- **G-NIUS` Avantguard Unmanned Ground Combat Vehicle Delivered To IDF**
- **Imco industries announced its top-of-the-line LED Lights - Illumination devices for armored fighting vehicles**
- **Iraqi Minister for National Security to Present at Defense Conference in Washington this July**
- **Contract of MNOK 127 for CROWS Programme**
- **Elbit Systems Introduces at Eurosatory 2010: New Dual Remote Weapon Station (DRWS)**
- **Force Protection Receives \$46.1 M for Additional Modernization of Cougar Fleet**

## Exhibitions

## AT Communication at KADEX 2010



AT Communication is pleased to have hosted Kazakhstan Defence Minister Zhaksybekov Adilbek Ryskeldinovich on its booth at the KADEX Defence Exhibition held in the last week of May 2010.

Held in the capital Astana, AT Communication showcased its state of the art Codan 2110 tactical HF Manpack. The Defence Minister took particular interest in some of the superior technical specifications of the Codan transceiver.

To coincide with the exhibition AT Communication is also pleased to announce the signing of a Memorandum of Understanding with the Ministry of Defense of Kazakhstan.



## Exhibitions

## Mercedes-Benz to Celebrate Four Mercedes-Benz World Premieres at EUROSATORY 2010



Mercedes-Benz will present 11 vehicles from its range of products with payloads between 0.5 and 110 tons for military customers at Stand B310 in the German Pavilion at EUROSATORY 2010 (June 14 to 18, 2010).

Mercedes-Benz will be celebrating four world debuts at EUROSATORY 2010. The all-wheel-drive Actros 4151 AK 8x8 Recovery is in a protection class that has never been offered before. The new recovery vehicle provides Level 4 ballistic protection and Level 4b mine protection according to STANAG 4569. The systems of the armored Actros 4151 AK 8x8 have been further optimized on the basis of many years of experience.

Another new development is the FGA 14.5 chassis, which is the latest and most high-performance platform for protected command and special-purpose vehicles. The FGA 14.5 special chassis from Mercedes-Benz provides manufacturers of military and civilian vehicles with a reconfigured platform based on that of the proven

Unimog concept. The Mercedes-Benz FGA 12.5 special chassis has been successfully used as a platform for the KMW Dingo 2 for years in a wide variety of military missions. The experience gained during these missions as well as changed deployment scenarios with regard to payload, mobility, and reliability provided the basis for developing the FGA 14.5 special chassis.

The third innovation — the LAPV 6.X concept vehicle — will augment the very mobile LAPV 5.4 light armored patrol vehicles from the G-Class. Series production of these vehicles for the German military will commence at the time EUROSATORY is held. The LAPV 6.X concept vehicle will improve on the LAPV 5.4 modular in the areas of protection (Level 3), offroad capability, and, above all, agility. In doing so, it will make maximum use of the G-Class modular system.

The fourth world-class innovation is the 7.X concept vehicle, which combines the properties of two different Mercedes-Benz model series. As is the case with the two lighter LAPVs, the vehicle's engine/transmission and cockpit are taken from the G-Class, while the frame and the axles are from the Unimog range. Because the larger vehicle, the LAPV 7.X, uses components from the Unimog modular system, it opens up an entirely new dimension of all-terrain capability for a patrol vehicle.

Also on show will be an Actros and a Zetros from the test series for the Australian military's Overlander project. A German army version of the all-wheel-drive Atego 1018 4x4 will also be on display as a representative of the vast array of Mercedes-Benz trucks in military use.

The long-nose Zetros truck will be represented at the Mercedes-Benz stand in two versions: as an unprotected three-axle flatbed truck with special military equipment and as an armored test vehicle for the Australian Overlander project.

As an expression of the brand's high mobility transport expertise for the roughest terrain, the Mercedes-Benz stand will also feature two Unimog U 5000 vehicles. A veritable legend that is unparalleled in its range of applications is the all-terrain Unimog U 5000 series for difficult operations in areas without roads or tracks. The Unimog is the most capable all-terrain vehicle in the world.

These vehicles embody like no others the traditional Mercedes-Benz brand attributes of robustness, reliability, economy, and safety, and they underscore the brand's heritage and its many years of expertise in building trucks.

Today's military missions require commercial vehicles that feature customized solutions for fulfilling a wide range of different tasks. As the world's largest manufacturer of commercial vehicles with payloads between 0.5 and 110 tons, Mercedes-Benz offers the most extensive range of vehicles for meeting many different logistical and tactical requirements. Mercedes-Benz has a comprehensive range of all-wheel-drive vehicles that extends from SUVs, vans, and partially militarized versions of the Atego, Axor, and Actros trucks to the allterrain Unimog and Zetros

vehicles and the Actros heavy-duty tractor unit.

Mercedes-Benz' commercial vehicles for military mobility are supported by a unique service program called Integrated Logistic Support (ILS) which provides the vehicles with a standardized maintenance concept. Mercedes-Benz supports its military customers by sending its service representatives all the way to the scene of operations. In combination with the use of parts and components from the series-produced versions of the vehicles, this results in a high level of fleet availability as well as low lifecycle costs and therefore an optimized total cost of ownership.

The brand maintains almost 5,000 service centers in 160 countries worldwide to ensure fast delivery of spare parts and workshop support.

The uniform service philosophy for all production series builds on this concept and guarantees maximum standardization, which ensures the highest level of operating security despite a minimum of training.

An overview of the vehicles on show:

- Actros 4151 AK 8x8 Recovery (Picture-Nr.: 10 A 633)
- Actros 4151 A 8x8 Overlander
- Zetros 1833 A 4x4 Overlander
- Zetros 2743 A 6x6
- Atego 1018 4x4 BWFPS
- U 5000 BWFPS
- U 5000 GLF
- FGA Chassis 14.5 (Picture-Nr.: 10 A 635)
- LAPV 7.X Concept (Picture -Nr. 10 A 634)
- LAPV 6.X Concept
- LAPV 5.4

are an experienced intelligence analyst, visit [http://www.lockheedmartinjobs.com/events\\_intelprof.asp](http://www.lockheedmartinjobs.com/events_intelprof.asp) for career information and to learn about a substantial sign-on bonus opportunity.

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that employs about 136,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The corporation reported 2009 sales of \$45.2 billion.

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## Defence Industry

### Textron to Deliver 80 Armored Vehicles to Iraqi Federal Police



New Orleans -- Textron Marine & Land Systems, an operating unit of Textron Systems, a Textron Inc. company, today announced it has been engaged to build 80 armored military vehicles for the Iraqi Ministry of Interior for use by the Iraqi Federal Police, to be contracted through the U.S. Army Foreign Military Sales (FMS) process. The total value of the procurement is approximately \$94 million.

Of the 80 vehicles, 72 will be configured as Armored Personnel Carriers (APC), while the remaining eight will be in the standard U. S. Army M1117 Armored Security Vehicle (ASV) configuration employed as Command and Control vehicles. All of the vehicles to be delivered under this contract will be equipped with the Textron Marine & Land Systems 40/50 turret armed with an MK-19 40mm grenade launcher and .50 caliber machine gun. A total of 184 vehicles (122 ASV and 62 APC) built by Textron Marine & Land Systems have already been delivered to Iraq under previous procurements.

"These vehicles will be a great addition to the significant number of Textron Marine & Land Systems armored vehicles already in use by the Iraqi Ministry of Interior. The ASV has demonstrated its outstanding combat effectiveness in meeting expanding roles and missions in Iraq, while proving to be safe and reliable," said Textron Marine & Land Systems General Manager Tom Walmsley. "The workforce at Textron Marine & Land Systems takes a great deal of pride in producing vehicles that defend and protect our U.S. troops as well as our allies. That same commitment is extended to providing highly mobile and well protected vehicles to the Iraqi forces."

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## Contracts

### Lockheed Martin Wins JIEDDO Task Orders

ARLINGTON, Va. -- Lockheed Martin has been awarded two separate task order contracts from the Department of Defense's Joint Improvised Explosive Device Defeat Organization (JIEDDO). The task orders have a combined value of nearly \$460 million.

"Lockheed Martin is proud to perform mission-critical work for the safety and well-being of our troops," said Bob Kramer, Lockheed Martin Information Systems & Global Services-Defense's vice president for Operational Systems & Services. "We are dedicated to JIEDDO, its mission of defeating IEDs and ultimately, saving lives."

Lockheed Martin is providing the JIEDDO Counter-IED Operations Integration Center analytical support teams with technical expertise in operational level military operations, intelligence operations research/systems analysis, and operations-intelligence fusion and analysis to support deployed U.S. and coalition forces in counter-IED operations.

The task orders have a one-year base period of performance with two one-year options, respectively. Work is underway in Northern Virginia and in the Central Command areas of operations and more than 500 employees will be required to support the mission. If you



## Defence Industry

Command (SOCOM).

### Navistar Defense and TATRA Team for Canadian SMP Program

WARRENVILLE, Ill. -- Navistar Defense, LLC and TATRA, a.s. today announced that they will team for the upcoming Canadian Department of National Defence Standard Military Pattern (SMP) vehicle program.

As part of the Medium Support Vehicle System (MSVS) program, SMP will replace Canada's Medium Logistics truck fleet.

"We are excited to team with Tatra for the upcoming SMP vehicle program and believe that Tatra's innovative vehicle designs and unique tactical chassis technology provide the team with a great advantage," said Archie Massicotte, president, Navistar Defense. "Combining our military vehicle expertise, the Navistar-Tatra team brings to the table the know-how and the flexibility to provide Canada with great tactical vehicle technology and support solutions."

"We are truly energized by how well Tatra and Navistar have come together as a team over these last several months," said Ronald Adams, Tatra's CEO and chairman of its board of directors. "As our cooperation has deepened with each passing day, and as we have built our first trucks together, we have come to realize how very powerful this team will be in the tactical vehicle arena. Our combined technology, engineering, manufacturing, and support capabilities present a compelling value proposition for our customers."

The Navistar-Tatra team also plans to utilize Navistar's global parts and support network for vehicle support. The team is also focused on creating local sustainment of its vehicles and will meet all requirements under Canada's Industrial and Regional Benefits policy.

Navistar will serve as the prime contractor for the SMP program. The company is currently providing Military Commercial off the Shelf (MilCOTS) vehicles to the Canadian DND as part of the MSVS program. The company's Canadian dealerships provide service support for these vehicles.

The SOCOM-specific vehicle configuration changes will be cut in on Oshkosh manufacturing lines in August 2010. M-ATV SOCOM variants with these configuration changes are scheduled to be delivered between September and November 2010.

Oshkosh engineers have been working in tandem with SOCOM to develop an M-ATV variant to meet their unique mission needs. The M-ATV SOCOM variant features a modified cargo deck, intended to accept specialized equipment based on the requirements of each mission, as well as larger front windscreens for increased visibility. The rear storage is accessible through an armored cargo access hatch in the passenger capsule, which can seat five while operating a Common Remotely Operated Weapon Station (CROWS) or four with a gunner.

"The M-ATV SOCOM variant will give Special Forces the life-saving protection capabilities and superior off-road mobility that already have benefited U.S. operations in Afghanistan, in addition to delivering design changes specific to SOCOM's needs," said Ken Juergens, Oshkosh Corporation vice president and general manager, Defense - Joint Programs. "This new variant is a part of our continuous effort to expand our M-ATV family of vehicles to best serve the needs of the Warfighter and leverage fleet commonality."

The SOCOM variant is the latest in the M-ATV family of vehicles and joins utility and ambulance variants recently developed by Oshkosh. Utility and ambulance M-ATVs were developed to help military operations provide resupply services and critical casualty care in unforgiving landscapes where tactical missions must operate.

The M-ATV was designed to provide superior off-road mobility for harsh mountainous terrain and unimproved road networks in places like Afghanistan. Oshkosh has received awards valued at more than \$5 billion to date for 8,079 M-ATVs, as well as spare parts kits, upgrade kits and aftermarket support.

## Robots

## Defence Industry

### Oshkosh Defense to Produce New M-ATV SOCOM Variant



OSHKOSH, Wis. -- Oshkosh Defense, a division of Oshkosh Corporation, announced today that the company received an undefinitized award valued at more than \$67 million to incorporate configuration changes to more than 420 MRAP All-Terrain Vehicle (M-ATV) variants for the U.S. Special Operations

### China develops second generation explosive-removing robot



The reporters learned from China Aerospace Science and Industry Corporation (CASIC) on June 1 that the second generation explosive-removing robot "Snow Leopard 10" independently developed by the CASIC with leading level technologies in

some aspects in China had entered the testing and experimental stage and would appear at the Zhuhai Air Show 2010 in south China's Guangdong Province.

The "Snow Leopard 10" robot has such prominent features as portability, flexibility and availability in a wide range of fields. It possesses certain self-action capability and running capability on bumpy surfaces, which can enable it to cross complex topography. It can operate not only on urban streets and in lanes and corridors, but on prairies and Gobi. It can also climb slopes and go upstairs and downstairs.

As most explosive-removing tasks are to grab, grasp and snatch up the heavy objects on the ground, the designers provided the mechanical hand of the second-generation explosive-removing robot with not only multiple flexibility degrees but enough clamping strength by adopting multi-functional mechanism to ensure the safety and reliability of the robot.

The mechanical hand of the "Snow Leopard 10" robot can also be replaced at any time according to actual needs. It can firmly snatch up all kinds of objects ranging from cell phone to 10-kilo iron block and then carry the objects to the designated positions according to orders.



### Defence Industry

## Thales Canada and DEW Team to Provide Bushmaster for TAPV



Ottawa -- Thales Canada is pleased to announce the signing of an exclusive teaming agreement with DEW Engineering and Development ULC on the assembly of the Bushmaster for the Tactical Armoured Patrol Vehicle (TAPV) Program in Canada.

This agreement forms a strategic alliance between two Canadian based companies for the provision of the best solution for the TAPV program, a program that will supply the Canadian Army with up to 600 armoured patrol vehicles.

"The Bushmaster is a combat proven vehicle serving with distinction with our Allies in Afghanistan today and the vehicle we know the Canadian military needs to meet its mission requirements today and over the next two decades and beyond," said Paul Kahn, Thales Canada President and CEO. "DEW Engineering and Development is an integral member of the TAPV Bushmaster team and brings unique expertise and a strong Canadian workforce in the armour vehicle field, a workforce that will become integral to the Thales Global Supply Chain for years to come."

With over 680 Bushmaster vehicles already in-service

with the forces of Australia, the Netherlands and other NATO Allies, Thales has a fully developed, independently tested and combat proven vehicle that is ideal for the Canadian TAPV program. The Bushmaster is a highly mobile vehicle with outstanding ballistic, mine and improvised explosive device (IED) blast resistant characteristics that has been proven repeatedly in combat to save lives.

The soldier comes first throughout the entire design of the Bushmaster. Ensuring they are fit to do their tasks at all times and safe from all threats along the way. The vehicle can be fitted for seating for up to 10 soldiers, including the driver, with fully supportive, energy absorbing seating in a fully air-conditioned environment.

The Bushmaster family of protected mobility vehicles includes patrol, command, ambulance, surveillance & target acquisition, direct fire support weapons and mortar vehicle variants and provides solutions for a wide variety of mission roles and applications including logistical support.

The base vehicle will be offered with various weapon systems, such as a remote weapons station, sighting and vision systems as well integrated electronic architectures and C4I options to enhance the vehicle mission performance.

"DEW Engineering and Development is excited about partnering with Thales in offering the Bushmaster vehicle for the TAPV program, in all my years in the armoured vehicle business I have never seen a vehicle of this caliber." added Tim Dear, President of DEW Engineering and Development. "This will be the combat vehicle that the Canadian worker will proudly say 'I helped build that and it's for my Army,' and the Bushmaster will bring lasting economic benefits to Canada not only through the TAPV program but on potential future export sales of the vehicle.

The Canadian Military has defined the Tactical Armoured Patrol Vehicle (TAPV) program as a general utility combat vehicle that will need to fulfill a variety of roles on the battlefield, such as reconnaissance and surveillance, command and control, cargo, and infantry section carrier. The vehicle will replace the Armoured Patrol Vehicle (APV), the Coyote LAV 2 and will complement the Light Utility Vehicle Wheeled (LUVW).



### Defence Industry

## UK MoD invites Supacat to tender all-new, all-British Supacat Protected Vehicle (SPV) 400 for LPPV Programme

British high mobility vehicle specialist, Supacat has been invited to tender in competition it's all new, all British Supacat Protected Vehicle 400 series (SPV400) for the UK Ministry of Defence's Light Protected Patrol Vehicle (LPPV) Programme.

Under an Urgent Operational Requirement the UK MoD is expected to order an initial batch of 200 vehicles to enter service in late 2011.

The receipt of the Invitation to Tender follows the

purchase earlier this year by UK MoD of two SPV400 vehicles as part of its ongoing risk reduction activity on the LPPV programme.



Last week the SPV400 was subjected to a second round of blast tests as part of the vehicle's development programme. The results underwrote Supacat's philosophy of future proofing the SPV400 design by aiming for protection levels above those within the LPPV requirement. Further refinement of the design is taking place prior to another round of testing next month.

If the SPV400 is successful in winning in the competition we believe it will give British troops the protection and mobility they need against the threat from Improvised Explosive Devices (IEDs) on operations in Afghanistan. It combines an integrated blast and ballistic protection system, including all composite protected crew pod and V-shaped hull. It has exceptional all terrain high mobility performance, comparable to the Supacat designed Jackal, and the agility to manoeuvre in tight urban environments.

A modular and future-proofed design allows the SPV400 to be upgraded to meet new threats and requirements.

The V shaped hull will protect the crew in an under-belly mine strike scenario. The modular approach will also enable the SPV400 to be repaired in theatre following mine blast incidents by replacing the damaged module(s).

"I am particularly pleased with the repair aspects of this testing as our offering has been designed to reduce through life costs by having the ability to be repaired in theatre. The modular and sacrificial approach reduces overall damage to the system and will allow LPPVs to be put back on the road quickly. With the SPV400, the MoD will not have to write a vehicle off each time there is a mine strike", said Nick Ames, Managing Director, Supacat.

The SPV400 is designed by Devon based Supacat, the world leader in high mobility, all terrain vehicles. Its armour protection partner is Coventry based NP Aerospace, which has designed the composite crew pod and protection system with access to the UK's classified armour technology. Supacat and NP Aerospace have formed an Alliance Agreement under which volume production will be conducted through the Alliance at NP Aerospace's Coventry facility. Supacat and NP Aerospace have proven track records in supplying and supporting vehicles in service with British Forces in Afghanistan, with Supacat responsible for Jackal and Coyote and NP Aerospace for Mastiff and Ridgback.

All Intellectual Property Rights for the SPV400 are UK based with the automotive solution residing with Supacat and the protection system with NP Aerospace. The Design Authority is held by Supacat. This means the UK retains full control over future design upgrades and the SPV400 is free from US ITAR restrictions. Potential future export revenues will be retained in the UK. The selection of the SPV400 for LPPV would strengthen the UK's innovation and engineering skills base and support manufacturing jobs, sustaining between 1000 and 1200 jobs throughout the UK.

## Contracts

### General Dynamics Awarded \$92 Million for Weapon Stations

STERLING HEIGHTS, Mich. -- General Dynamics Land Systems, a business unit of General Dynamics, has been awarded \$92 million to supply high-performance Stabilized Commander's Weapon Stations (SCWS) to the U.S. Army TACOM Lifecycle Management Command of Warren, Mich.

The weapon station provides Army and United States Marine Corps vehicle commanders with the ability to acquire and engage targets from inside the protection of an armored vehicle. It is designed to mount on a variety of military platforms and works with a high-performance .50-cal. machine gun. The weapon station has targeting characteristics equal to those of the current M1A1 fire-control system and includes a laser range finder and thermal site.

The work will be performed by existing General Dynamics Land Systems personnel in Lima, Ohio, Anniston, Ala., and Sterling Heights. It is expected to be completed by February of 2013.

## Robots

### US Army Testing Rugged, Autonomous Robot Vehicle



Arlington, Va. -- The U.S. Army's Autonomous Platform Demonstrator, or APD, is a 9.6-ton, six-wheeled, hybrid-electric robotic vehicle currently undergoing developmental and mobility testing at Aberdeen Proving Ground, Md.; the demonstrator vehicle represents the state of the art in unmanned ground vehicle mobility technology.

With its advanced hybrid-electric drive train, the 15-foot-long vehicle, being developed by the U.S. Army Tank Automotive Research, Development and



Engineering Center, or TARDEC, can achieve speeds of over 50mph.

When equipped with its autonomous navigation system, the APD is configured with GPS waypoint technology, an inertial measurement unit and computer algorithms which enable it to move autonomously at speeds up to 50mph while avoiding obstacles in its path.

"The vehicle has obstacle detection and avoidance technology," said Dr. Jim Overholt, senior research scientist in robotics, Tank Automotive Research, Development and Engineering Center.

The mobility testing is aimed at advancing and developing the robot's ability to maneuver at higher speeds while maintaining extreme terrain-ability at lower speeds.

"We've run it through courses, slope testing and brake testing," said Chris Ostrowski, associate director for Vehicle Electronics and Architectures at TARDEC.

The APD is currently testing high-speed maneuverability, such as lane changing. "This is a challenging controls problem with a skid steer vehicle. We want the robot to be stable when performing maneuvers like this, but we also want it to retain the other mobility characteristics that it possesses at lower speeds," said Ostrowski.

Other mobility characteristics include the ability to climb a one-meter step, navigate a 60-percent slope, and pivot turn in place.

Being a series hybrid-electric vehicle, the APD is propelled by six in-hub electric motors and has a diesel generator which charges its lithium ion batteries.

"The state-of-the-art hybrid-electric drive train is just one of the mobility technologies we are demonstrating with this platform," said Andrew Kerbrat, APD project manager, TARDEC.

Other technologies being demonstrated include advanced suspension systems, thermal and power management systems, robotic safety systems, and lightweight hull technologies.

"We've made a lot of progress with this platform in a short time period. From concept to wheels on the ground was just a shade over two years, and in the eight months since then, we've driven almost 3,000 kilometers and have demonstrated 95 percent of the metrics that we were trying to show with this platform," said Kerbrat.

APD is the mobility platform being used by the Robotic Vehicle Control Architecture, or RVCA Army Technology Objective, also out of TARDEC. Working with PEO-Integration, RVCA has integrated a suite of system control, display and sensing hardware and software onto APD that allow it to be controlled real-time by a Soldier, or operate in an autonomous mode.

"It uses a variety of sensors and a Ladar -- a laser/radar scanning radar that can detect moving objects at distances," said Overholt. Additionally, RVCA provides Reconnaissance Surveillance and Target Acquisition capabilities.

"It has a four-meter mast with a sensor ball on top so it goes up pretty high and can see out quite a ways," said

Chris Ostrowski.

"When you combine the autonomy and control capabilities provided by RVCA with the extreme mobility characteristics of APD, it allows the Soldier operator to quickly deploy a mission payload precisely where he wants it, and over some very tough terrain," said Kerbrat.

"The bottom line is that we are providing the Soldier with a significant capability that will assist him in the performance of his mission, while keeping him safer in the process."



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## Defence Industry

### BAE Systems and DEW Engineering Team for Key Canadian Program

OTTAWA, Canada -- BAE Systems and DEW Engineering & Development of Ottawa have signed a teaming agreement to collaborate for the Close Combat Vehicle (CCV) program, which is one of Canada's highest priority programs.

DEW has been chosen to carry out final assembly of the turret, as well as integration and test for the CV90 if the vehicle is chosen for the CCV program. This arrangement will be similar to the proven approach already demonstrated with all five existing CV90 export customers - Norway, Finland, Switzerland, Holland and Denmark.

"We are proud to partner with DEW," said David Allott, Managing Director BAE Systems Global Combat Systems. "DEW has an excellent reputation for its engineering skills, which is why we selected DEW as our partner to provide sustainable, combat proven vehicles to meet the needs of the Canadian Army. This ideal alliance combines our vehicle pedigree with DEW's detailed knowledge and experience of Canadian requirements."

DEW Engineering and Development is the preeminent firm in Canada for land combat vehicle refit and refurbishment and add-on armour protection systems. DEW has completed several projects for the Canadian Army, including extensive repair and refit work on the Army's light armoured vehicle fleet, major upgrade tasks on the Army's Leopard tanks and more recently, a multi-year life extension program for the Army's M113 family of vehicles, improving its mobility, firepower and protection to make it one of the safest vehicles in its class.

"DEW and BAE Systems are a winning pair for the CCV program," said Tim Dear, president, DEW Engineering and Development. "BAE Systems' proven CV90 is an impressive vehicle that will outshine the competition. With DEW's Canadian workforce, the Canadian Army will have a high-performing vehicle made with the same dedication and passion as those who serve their country."

BAE Systems has also teamed with DEW for the LEMUR remotely controlled weapon system, which is being offered for the Tactical Armoured Patrol Vehicle,

CCV, LAV III programs and M113 upgrades.

BAE Systems has operated in Canada since 2000. The company has a strong track record in delivering economic benefit by partnering with domestic industries and delivering on offset commitments.

## Defence Industry

### The FN SCAR Reaches FINAL Milestone

FN Herstal, S.A. (FN) received notification from the USSOCOM Program Executive Office SOF Warrior (PEO-SW) that the SCAR Acquisition Decision Memorandum (ADM) was approved and signed on April 14, 2010, moving this FN program into the Milestone C phase.

This decision authorizes the production and deployment of the Special Operations Forces (SOF) Combat Assault Rifle (SCAR) MK 16 and MK 17, as well as the Enhanced Grenade Launcher Module (EGLM) MK 13.

Following a worldwide solicitation to the military firearms industry, nine vendors submitted a dozen different designs for a new modular, multi-caliber weapons system. The FN SCAR submission was the only weapons system to pass all of the Go/No-Go criteria and was unanimously chosen in November 2004 by the selection board composed of senior operators from every SOF component. The SCAR is the first new assault rifle procured by the U.S. Military through a full and open competition since the M16 trials were held in the mid-1960s. Tests in reliability, accuracy, safety and ergonomics were administered from August 2005 to September 2008 and were conducted in a variety of environments including urban, maritime, jungle and winter/mountain operational test scenarios. The SCAR weapons system successfully endured more than two million rounds of ammunition during these trials, therein making it one of the most heavily tested weapons in the history of small arms.

The FN SCAR system consists of two highly adaptable modular rifle platforms and a grenade launcher. Type-designated as the MK 16 MOD 0 5.56mm Special Operations Forces Combat Assault Rifle and the MK 17 MOD 0 7.62mm Special Operations Forces Combat Assault Rifle, both weapons are available with three different barrel lengths optimized for conducting operations in close-quarters combat, standard infantry and longer-range precision fire roles. All SCAR barrels can be easily interchanged by the operator in just minutes to instantly meet the requirements of virtually any mission. The MK 13 MOD 0 40mm Enhanced Grenade Launcher Module (EGLM) quickly mounts under the barrel of either SCAR platform, providing additional capability to the individual warfighter's firepower, and can be easily configured for use as a stand-alone weapon as well. Because of the SCAR system's modular design, ergonomic commonality (100%) and parts commonality (greater than 80%), it represents a significant reduction in training costs and

life-cycle support. The weapon system's open architecture is designed to support future advancements in operational requirements including ammunition, aiming devices, sighting systems and other mission critical equipment.

## Robots

### G-NIUS` Avantguard Unmanned Ground Combat Vehicle Delivered To IDF



G-NIUS Unmanned Ground Systems Ltd., a jointly-owned company of Elbit Systems Ltd. and Israel Aerospace Industries Ltd., now unveils that its AvantGuard® UGCV was delivered to the IDF.

G-NIUS Unmanned Ground Systems Ltd., a jointly-owned company of Elbit Systems Ltd. (NASDAQ and TASE : ESLT) and Israel Aerospace Industries Ltd., now unveils that its AvantGuard® UGCV was delivered to the IDF.

Based on the technological strength and capabilities of G-NIUS' Guardium™ UGV system, as well as building on the Tactical Amphibious Ground Support (TAGS) vehicle excellent maneuverability in harsh terrain environments, the AvantGuard® UGCV significantly expands the applications envelope to encompass Counter IED (CIED) and ground maneuvering combat missions.

Employing a set of modular payloads such as: Ground Penetrating Radar, Counter IED Jammer, Mini-Pop cooled thermal surveillance camera, Counter Human & Vehicle Detection Radar and more, and based on its inherent endurance, AvantGuard® can be effectively deployed in a variety of combat missions including: Counter IED, Advance Guard, Armed Sentry, Combat Logistic Support, CASEVAC and more. It is controlled by a mobile or portable Operational Control Unit (OCU), and can also operate in a Follow-me mode, where it is autonomously trailing a guide-foot soldier.

The rapid and effective integration of the Guardium™'s autonomous kit to the TAGS platform underscores the robustness and adaptability of G-NIUS' strapped-on autonomy approach.

#### About G-NIUS Unmanned Ground Vehicles:

G-NIUS Unmanned Ground Systems (UGS) Ltd., a leading Israeli unmanned ground systems company, is an equally shared company of Israel Aerospace Industries Ltd. and Elbit Systems Ltd. G-NIUS develops and supplies a variety of autonomous unmanned ground system solutions, which are based on a common, versatile and layered avionics suite and apply emerging technological breakthroughs in navigation, control theorem, artificial intelligence and 3D artificial imaging.



G-NIUS' customer base includes military, homeland security and law enforcement organizations.



### Exhibitions

#### Imco industries announced its top-of-the-line LED Lights - Illumination devices for armored fighting vehicles

Tel-Hanan, Israel -- Imco Industries, Ltd., a global provider of electrical harnesses, control boxes and electromechanical devices, for military applications, announced today the line of LED LIGHTS FOR ARMORED FIGHTING VEHICLES. IMCO breaks new ground as the industry's superior designer and manufacturer of military illumination and marking systems and will showcase its LED Lights at the upcoming Eurosatory 2010, at Hall 6 Stand B661.

Imco's LED LIGHTING products are combat proven and were developed and implemented on IDF MERKAVA Namer APC, as well as other vehicles.

LED Lights are easy-to-use modular systems designed for harsh environment applications. It's flexible and compact design allow easy fitting into the constrained spaces of military vehicles and equipment.

The benefits of LED technology are known and proven: low power consumption, superior mechanical and environmental durability and extended life cycle.

IMCO's LED LIGHTS family includes internal LED dome and crew compartment lights, external rear and front lights including main headlights, external flood lights with dual beam optimized to cover close and medium distance areas, standardized LED lights for tanks, armored vehicles, mobile shelters, aircraft, helicopters and naval vessels and LED IR driving modules.

The company also offers customized LED lights for specific applications and platforms and retrofit lamps for direct replacement of old light bulb types.

"We are proud to introduce our state-of-the-art LED

LIGHTING family — designed for extreme mechanical and environmental durability," said Boaz Weiss, IMCO's VP Marketing & Business Development. "I am confident that the LED LIGHTING family will build on the successful acceptance of our electric devices, which have received an excellent feedback from the market and are used currently worldwide by the Israel Defense Forces, other modern armed forces, and demanding defense manufacturers."

Mr. Weiss continued: "The LED LIGHTING family is a breakthrough in light density and ruggedness that represents our 36 years expertise in the defense field. By using LED LIGHTS the end users can benefit from the advantages of these innovative lights solutions offer, such as vehicle low battery voltage alert, built-in and remote dimming, back-up batteries, blackout mode with intelligent microprocessor control and more, as well as basic benefits such as durability, less heat dissipation, low energy consumption and multitude of colors without using an optical filter"

#### About Imco:

Imco Industries Ltd. is a market leader provider of military control and electrical systems for combat and armored vehicles, military aircraft and helicopters, missiles, Naval, and UAVs. Founded in 1974, Imco has extensive experience in design, manufacturing and delivering of harnesses, control boxes, control panels, LED lighting for armored vehicles, smoke grenade launchers, slip rings for tanks and special electromechanical devices.

Imco's ability to tailor cutting-edge technology and innovative design to specific project requirements enables it to effectively respond to today's most challenging demands.

The company is an approved vendor by US Army, US Air force, IDF and modern armies.



### Exhibitions

#### Iraqi Minister for National Security to Present at Defense Conference in Washington this July

Washington, D.C. - June 7, 2010 - New-Fields Exhibitions, organizers of the Iraq Aviation and Defense Summit (IADS), announced today that His Excellency Shirwan Al-Waili, Iraqi Minister of State for National Security, has confirmed to talk about the challenges and opportunities in the defense sector of his home country, answer questions, and conduct one-on-one meetings with delegates at IADS, a two-day summit on July 22-23 in Washington, D.C.

HE Al-Waili is expected to give delegates a rare and thorough birds' eye view of the threats to the defense and security of Iraq, national security and defense strategies, border control challenges, and foreign military presence in the country. Such topics are central to senior executives in charge of devising programs and setting strategies within their defense companies.

A former Brigadier General of the Iraqi Army with

Master's Degree in Public International Law from the University of Oxford, HE Al-Waili has been the Minister of State for National Security in the first permanent Iraqi government. He had served as an advisor for regional affairs with the National Security Ministry as well as a member of the Constitutional Committee.

HE Al-Waili is an Iraqi National Assembly member from the list of the United Iraqi Alliance candidate and the Islamic Dawa Party - the organization of Iraq. He was also a member of the Cairo Conference of the national dialogue through the Iraqi National Assembly and of the Board of Deputies of the Second Session. He represented Iraq at the Arab League Conference and in tripartite committee in the Turkish-Iraqi-American theme PKK.

HE Al-Waili joins other Iraqi defense officials who have confirmed to speak at IADS:

Confirmed Speakers include:

- General Anwer Ahmed, Iraqi Air Force Commander, Ministry of Defense
- MG Faisal Ghdban, Chief of Staff, Iraqi Air Force, Ministry of Defense
- Omar Adnan Huren Al- Huttaitawi, Director General, State Ministry of National Security Affairs
- Hameed Rashed , Director General of Political Security, State Ministry of National Security Affairs
- Staff MG Ali Hadi, Director M5 Strategy & Plans, Iraqi Joint Head Quarters
- Staff MG Kareem Mohammed Salloom Al-daffaie, Minister Advisor for Logistics Affairs, Ministry of Defense
- General Ahmed Hashem, Commander of Baghdad Operations Center Command, Prime Ministers Office
- LTG Riyadh Jalal Tawffeeq, Deputy Commander, Iraq Ground Forces Command
- BG Shihab Ali, Commanding General of Air Surveillances, Ministry of Defense
- BG Shwan Mudher Ali, Director of Air Logistics, Ministry of Defense
- BG Scott Hanson, Director of the Iraqi Training & Advisory Mission
- Saad Yousif, Political Advisor, National Security Council
- Hamza Shareef, Director General (International Policy), National Security Council
- Dr. Adnan Blebil, Director General, Iraqi Civil Aviation Authority
- Stafford Clarry, Director General, Erbil International Airport

The officials will give first-hand insights on the following important organizations:

- Coalition Military Assistance Training Team, organizes, trains, and equips the Iraqi Army
- Civilian Police Assistance Training Team, organizes, trains, and equips the Iraqi Police
- Coalition Army Advisory Training Team, builds the Iraqi Army
- Coalition Air Force Transition Team, builds the Iraqi Air Force
- Maritime Strategic Transition Team, supports the Iraqi Navy, Marines and Coast Guard
- Civilian Police Assistance Training Team, builds

Iraqi police agencies

- Intelligence Transition Team, builds military and police information organizations
- Iraqi National Counter-Terrorism Task Force, assists Iraqi special operations
- Security Assistance Office, assists purchase of equipment and overseas training
- Joint Headquarters Assistance Team, advises the Iraqi Joint Headquarters
- Ministry of Defense Transition Team, advises the Ministry of Defense staff

### One-to-One Meetings

Scheduled one-to-one meetings with Iraqi officials and panel presentations will provide you insights and analysis of the current challenges facing Iraq Aviation, Security and Defense.

Scheduled meetings are on First-come, first-served basis.

### About IADS

The Iraq Aviation and Defense Summit and Expo (IADS), now on its third year, is the world's largest and most respected event focused on Iraq's aviation, security and defense challenges and opportunities. IADS is the only event where you hear from those who are responsible for shaping the future of aviation, security and military requirements in Iraq. For three consecutive years, IADS has featured Iraqi ranking military officers, policy makers and government decision makers.

### About New-Fields Exhibitions

Founded in 1994, New-Fields today is a leading information provider and conference/trade shows organizer on defense, homeland security to governments, defense and law enforcement agencies, industries and academe around the world.

## Contracts

### Contract of MNOK 127 for CROWS Programme

CROWS is a joint acquisition program for weapon stations for the US Army's vehicle programs.

KONGSBERG has booked an order valued at NOK 127 millions from the US Army.

The order is part of the increase of the Common Remotely Operated Weapon Stations (CROWS) framework agreement for up to 10.349 systems signed in December 2009.

The initial CROWS II framework agreement was disclosed to the Oslo Stock Exchange on 22 August 2007.

CROWS is a joint acquisition program for weapon stations for the US Army's vehicle programs. A common solution will result in substantial efficiency gains in respect of protection, training, support and further development.

**Defence Industry**

**Elbit Systems Introduces at Eurosatory 2010: New Dual Remote Weapon Station (DRWS)**



Haifa, Israel -- Elbit Systems Ltd. is introducing a new Dual Remote Weapon Station (DRWS) at the upcoming Eurosatory 2010.

The new Dual Remote Weapon Station (DRWS) is a derivative of Elbit Systems' RCWS-M, a medium-sized remotely-controlled weapon station, in serial production and qualified for service in the Austrian Army.

With features such as lightweight, low silhouette, stabilized dual axis and the ability to be externally mounted (without hull penetration), the DRWS is highly suitable for a variety of AFVs, APCs as well as other platforms. The Dual Remote Weapon Station is equipped with two weapons, the primary weapon can be a 40 mm AGL or a 12.7 mm heavy machine gun, and the secondary weapon is a 7.62 mm machine gun. The DRWS provides the operator with the advantage of being able to use both, 40 mm grenades with a lethal surface affect, as well as a 7.62 mm machine gun used for specific targets.

The DRWS is equipped with a day camera, a night vision camera and a laser range finder (LRF), and is remotely operated from the gunner or commander workstations. Targets are acquired via either one of the video channels connecting the day camera, or night vision camera to the gunner and commander displays. Automatic Target Tracking is available via the day or thermal channels, with the cameras set to the narrow field of view. These capabilities allow the gunner to perform accurate aiming and firing, and hit static and moving targets, while being either static or on the move.

A unique DRWS feature is its ability to work in Surveillance Mode. A dedicated elevation drive enables the weapon to be pointed upwards at the maximum elevation angle, while the operator surveys the theater of operation with the optical pod. While in Surveillance Mode the firing is disabled.

The DRWS can be interfaced with a variety of systems such as surveillance pods, Laser Warning System (ELAWS), Acoustic Firing Locator System (AFLS), Weapon Integrated Battle Management System (WINBMS), See-Through-Armor (STA), Local Situational Awareness System (LSAS) and an external vehicle mast-mounted observation pod, turning the new Dual RWS into a highly effective sensor-to-shooter and

observer-to-shooter weapon station.

The DRWS is based on Elbit Systems' proprietary experience and know-how, in the fields of fire control systems, turret drives and stabilization systems, automatic target trackers and electro-optical sensors, generated and refined over the course of more than thirty years of service on the IDF's main battle tank, the Merkava, and other armored fighting vehicles and main battle tanks worldwide.



**Contracts**

**Force Protection Receives \$46.1 M for Additional Modernization of Cougar Fleet**

Ladson, SC. -- Force Protection, Inc., a leading designer, developer and manufacturer of survivability solutions and provider of total life cycle support for those products, today announced it has received a modification to contract M67854-07-D-5031 from the United States Marine Corps Systems Command for additional modernization of the U.S. military's Cougar fleet.

The approximate \$46.1 million firm, fixed price contract modification provides for the purchase of 2,451 enhanced Automated Fire Extinguishing Systems ("AFES"), with deliveries scheduled to begin in July 2010 and be completed by February 2011.

Randy Hutcherson, Chief Operating Officer for Force Protection, commented, "We are extremely proud of the proven performance and continued durability of the Cougar fleet, and believe this award for additional modernization is another indicator that our Cougar family of vehicles remains a critical asset for the U.S. and other militaries worldwide. The AFES modernization program complements our ongoing successful efforts for the purchase and installation of Independent Suspension System ("ISS") kits on a significant number of Cougars. We will continue to aggressively pursue additional modernization opportunities, and anticipate this segment of the business will remain an important component of our revenue mix in the years to come."



**Contracts**

**Northrop Grumman Submits Proposal for NATO Alliance Ground Surveillance**

MELBOURNE, Fla. -- Northrop Grumman Corporation formally submitted its proposal this week for the NATO Alliance Ground Surveillance (AGS) system - NATO's top and long-running acquisition program. A contract award is anticipated in October 2010.

"This program has been a model of the value of transatlantic cooperation to meet the security challenges of the 21st century, and we are proud to lead an industry team of more than 25 companies from the 15 nations participating in this program," said Pat McMahon, sector vice president of Northrop Grumman Aerospace



Systems' Battle Management & Engagement Systems business unit. "The true value of this multinational effort shows in this proposal. This industry team brings together leading defense industries and their state-of-the-art air and ground capabilities to take advantage of national investments already made in operationally fielded and proven systems for the good of the entire alliance. The result is an affordable, executable program that will provide the earliest fielded capability to meet the alliance's urgent need to protect its forces with persistent intelligence, surveillance and reconnaissance."

The NATO AGS proposal includes an air segment based on the Block 40 version of the RQ-4 Global Hawk high-altitude, long-endurance (HALE) unmanned aircraft that will be missionized to meet NATO requirements. It also includes mobile and transportable ground stations and a world-class mission operation support center at the main operating base in Sigonella, Italy.

The NATO air vehicle will be equipped with Northrop Grumman's Multi-Platform Radar Technology Insertion Program (MP-RTIP) ground surveillance radar sensor, which will be capable of detecting and tracking moving objects throughout the observed areas as well as providing radar imagery of target locations and stationary objects. The entire system will empower a network-enabled approach to support interoperability with national systems and to perform the entire range of NATO missions, from peacetime to crisis management.

The ground element will be wholly produced by European industry, offering the potential for national re-use in other programs. It provides real-time data, intelligence and target identification to ground commanders within and beyond line of sight.

"As a critical component of the NATO Response Force, the AGS system will give NATO and national decision-makers continuous ground situational awareness to enable a tailored response to meet the situation and minimize the need to put forces in harm's way without foreknowledge. It will be crucial for success in Afghanistan and in future out-of-area operations," said Matt Copija, director of Northrop Grumman's NATO AGS program.

The system leverages the Global Hawk's combat-proven performance and unmatched capabilities, with more than 40,000 hours flown at altitudes up to 60,000 feet for more than 32 hours, well above commercial airspace. The NATO AGS program will mark the first international sale of the Block 40 version of the Global Hawk.

Northrop Grumman is the prime contractor for the NATO AGS program based at its Melbourne, Fla., facility. Its industrial team includes EADS, Selex Galileo, General Dynamics Canada, and Kongsberg. The NATO Alliance Ground Surveillance Management Agency (NAGSMA), which was chartered to acquire the NATO-owned and operated core capability, is responsible for the procurement of the NATO AGS capability until it has reached full operational capability. NAGSMA was established in September 2009 after all

15 participating nations signed the AGS program memorandum of understanding.

## Defence Industry

### Lockheed Martin Develops Tactical Handheld Device for Dismounted Soldier Situational Awareness

ORLANDO, FL -- Lockheed Martin has developed a ruggedized, tactical handheld device for dismounted Soldiers. The Tactical Digital Assistant (TDA) provides unprecedented situational awareness, command and control, and blue force tracking capabilities to brigade and below forces.

Lockheed Martin's TDA allows dismounted Soldiers to maintain secure communications and exchange vital position and situational awareness data with mounted forces in an operational environment. Its intuitive user interface supports shared full motion video and sensor command and control. Unlike similar commercial technology, the TDA's ruggedized design can withstand harsh operational environments.

The TDA interfaces with both fielded U.S. Army Force XXI Battle Command Brigade and Below (FBCB2) and emerging Joint Battle Command-Platform systems. An open architecture provides flexibility for future growth, including new applications and increased memory requirements. Lockheed Martin is developing numerous applications for the TDA to support battlefield challenges. The TDA is compatible with current FBCB2 software and provides the flexibility to host the Google Android operating system.

The TDA builds on the company's experience with ground Soldier technologies, including the Common Controller Device, TacScene, and industry-leading production programs like the Apache M-TADS/PNVs.

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that employs about 136,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The Corporation reported 2009 sales of \$45.2 billion.

## Contracts

### DRS Technologies Receives \$140 Million in Follow-On Orders for Thermal Sights for U.S. Army and U.S. Marine Corps

PARSIPPANY, N.J. -- DRS Technologies, Inc. announced it has received \$140 million in orders for Thermal Sights from the U.S. Army PEO Soldier, Project Manager Soldier Sensors and Lasers (PM SSL).

The orders, which are part of a \$387-million contract, include \$68 million in Light, Medium and Heavy Weapon Thermal Sights for the U.S. Army and \$72 million in Medium and Heavy Weapon Thermal Sights

for the U.S. Marine Corps.

Deliveries for the U.S. Army will occur January to December 2011. Deliveries for the U.S. Marine Corps will start in October 2010 and will continue through July 2011.

The units will be manufactured by the Melbourne, Florida and Dallas, Texas operations of the DRS Reconnaissance, Surveillance & Target Acquisition (RSTA) business group.

The Thermal Sights offer menu-based, push-button controls for fast and easy polarity, brightness and reticule adjustment and employ proven 25-micron, uncooled infrared technology that provides the warfighter a crisp thermal image of target information.

The Light Weapon Thermal Sight offers a 15-degree horizontal field-of-view lens that's ideal whenever a wide FOV with close-in focus is required -- including Military Operations on Urbanized Terrain (MOUT). It also provides a narrow FOV for detection and recognition of distant targets. The Light Weapon Thermal Sight is powered by a four-pack of L91 tactical batteries lasting 25 hours.

Medium and Heavy Weapon Thermal Sights are designed for crew-served weapons and differ only in their telescope assemblies. Equipped with 3X e-zoom, each interfaces with a variety of 52- and 103-mm telescopes. These sights are powered by six packs of L91 batteries with an 18-hour life.

Terry Murphy, President, DRS Reconnaissance, Surveillance & Target Acquisition (RSTA) said: "Our Thermal Sights are giving American warfighters a significant advantage in battlefields of all kinds, including challenging urban environments."

"The DRS employees who design and build these sights recognize how vitally important these capabilities can be. They're humbled to be playing even a distant role in helping our soldiers and Marines do the best possible job and committed to making sure that the DRS Thermal Sights deliver outstanding performance in even the most dangerous situations."

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## Defence Industry

### Thales innovates to protect the foot soldier with the portable biosimeter

Stockholm -- Thales innovates to protect soldiers by launching BioWARD, a personal chemical, biological, radiological and nuclear (CBRN) detection solution.

BioWARD is a portable biosimeter capable of continuously collecting the biological substances absorbed by foot soldiers to minimise as quickly as possible the impact of any contamination on their health.

Used as a Threat Detector, this new personal sampler continuously collects air particles on a filter. Combined with identification devices, BioWARD rapidly detects biological or radiological contamination. The health services are then informed as soon as possible to minimise the impact of contamination on foot soldiers. In the event of suspected pathogenic agents in the field, this

innovative solution offers line managers an initial means of exposure evaluation.

BioWARD meets the need for better protection of troops against the increasingly widespread threats they face in the various theatres of operations.

Thanks to its ease of use, its low cost and adapted ergonomics, BioWARD can be widely used in the theatre of operations, but also in an urban environment by the fire brigade and police.

BioWARD has competitive advantages, it has a greater range than the other products of the market, its results are easy to interpret as they can be analysed by all the identification devices and, lastly, the substance collection is entirely representative of the need for human protection.

Throughout Europe, Thales offers solutions to detect, identify and predict chemical, biological, radiological and nuclear (CBRN) threats in order to delimit high-risk areas. Its solid know-how in the field of CBRN technology and its position as world leader in critical system integration make Thales a recognised player in this field.

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## Defence Industry

### FN Herstal Introduces Medium Vehicle Pintle for Special Forces Vehicles



Following market requirements, Belgium-based firearms manufacturer FN Herstal has recently designed and developed a new integrated weapons system called the Medium Vehicle Pintle (MVP) that provides vehicles operated by Armed Forces - and Special Forces in particular - with maximum firepower.

The Medium Vehicle Pintle is derived from technology that has contributed to FN Herstal's success in airborne applications over the recent years.

#### The MVP features:

- the exclusive .50 cal M3P/M3M (GAU-21) machine guns, which is currently in use on more than 2,500 helicopters and subsonic aircraft worldwide, providing a high firing rate of 1,100 rounds per minute and featuring unique operating angles ( $\pm 80^\circ$  elevation and  $\pm 80^\circ$  depression)
- a soft mount system that absorbs recoil forces and guarantees outstanding balance during burst and

- unequalled firing accuracy
- a 300-round ammunition box mounted on the pintle head, which eliminates the need for a flexible chute
- a telescopic shoulder brace which ensures maximum comfort for short and long range target acquisition
- a standard pintle connection interface for easy installation on the vehicle

an optional links collector.

The MVP is a fully mechanical system that does not require any electrical power to function, making firing possible even under extreme conditions of electrical power loss of vehicle.

The well thought out design of the MVP has resulted in the most powerful and reliable vehicle weapons system on the market, combining light weight, compact size and optimum efficiency.

The Medium Vehicle Pintle will be on display in FN Herstal's booth at EUROSATORY in Paris from 14 to 18 June 2010 (Belgian Pavilion, Hall 6, Stand No. F201).



### Exhibitions

#### Hatehof to Announce Launch of NBC Division at Eurosatory



Israel -- Hatehof, a research, development, and production stalwart of armored vehicles for combat and terror threats, announces its new NBC (Nuclear, Biological, Chemical) division at this year's Eurosatory.

Following extensive research and development efforts, the company's new array of NBC vehicles and their accessories complement, now offers a comprehensive solution capable of handling an unconventional incident. The range of systems can be seen at Hatehof booth located Outdoors PE 6B stand F201.

"Hatehof can now provide an effective response to new and emerging threats from weapons of mass destruction," says Shimon Shacham, Hatehof's CEO. He goes on to explain, "The proven Girit decontamination vehicle, in use by the IDF, has been around for years. Now, following an exhaustive development process, we boast a range of definitive and complete solutions to counter NBC threats. We've been studying the NBC field for some time and our resulting philosophy is a tripartite answer to unconventional incidents. Three types of fully encased vehicles, command and control, chemical reconnaissance, and decontamination offer customization benefits that only the vehicle's designer can claim."

With the command and control vehicle, a team is dispatched to an incident's location to manage the scene. Hatehof's Wolf type vehicle incorporates a hermetically sealed hyperbaric chamber with systems for incident location designation and advanced communications, to name a few. The chemical recon vehicle is responsible for detecting and identifying chemical contamination sources. A Sniffer type vehicle based on the Wolf provides maximum protection for the crew. It is armored, has a cased and sealed hyperbaric chamber container, and off-road capability. This configuration offers air and ground sampling equipment with a sterile cell for the samples, advanced communications, systems for imaging and data transmission to the command and control team, and a host of accessories for crew protection.

The decontamination configuration will be presented at Hatehof's booth onboard a Girit type vehicle. It functions, however, as an independent container that can be installed onboard a flatbed truck in emergencies. This type of deployment frees the trucks to function as intended at all other times. The container configuration offers the added advantage of operating as a stand alone unit, independent of a vehicle altogether, when decontaminating a stationary source. Hatehof's decontamination unit includes a water tank, a specialized elevator for loading decontamination materials, a purpose built system for mixing water and decontamination chemicals, and a decontamination hoses system up to heights of 50 meters. Additional benefits offered by the system include decontamination in high elevations, along traffic arteries, and for population decontamination.



### Robots

#### General Dynamics Robotic Systems-Led Team Awarded Collaborative Technology Alliance Agreement

WESTMINSTER, Md. -- A General Dynamics Robotics Systems-led consortium of eight academic and corporate leaders in robotic technologies has been awarded a \$63 million five-year research agreement by the U.S. Army Research Laboratory to create the technical foundation supporting development of autonomous unmanned air and ground systems.

This agreement also has a second five-year option worth \$67 million, and a parallel technology-transition contract valued at up to \$90 million to facilitate transition of technology to other government programs. Taken together, the entire effort has a potential value of \$220 million.

General Dynamics Robotic Systems is the Integration Lead Organization responsible for integrating the broad palette of technology required to create future highly autonomous unmanned systems and leading the transition of this technology to advanced development and acquisition programs. The robotics consortium members include: Carnegie Mellon University, University of Pennsylvania, University of Central



Florida, Florida A&M University, Jet Propulsion Laboratory/Caltech University, QinetiQ North America, and Boston Dynamics.

“This award paves a path for transitioning the seminal work of our alliance’s researchers into robotic products and systems that will transform the battlefield and save soldiers’ lives,” said Phil Cory, vice president, General Dynamics Robotic Systems.

“The alliance will pursue four technology areas critical to the development of future autonomous air and ground systems of multiple scales,” said Cory. “These key technologies are perception, intelligence, human-robot interaction, and dexterous manipulation and unique mobility. In addition, the alliance will focus on the interplay between these four areas to form the foundations of cohesive, integrated robotic systems.”

The robotics alliance will advance fundamental science and technology in several key areas including the ability of unmanned systems to sense and fully understand features and activities in the local environment; interact intelligently with the surroundings to successfully conduct meaningful activity, individually or as part of a team; readily adapt to changing situations and learn from prior experience; be integrated safely and successfully into human activity; dexterously manipulate objects in a human-like fashion; and maneuver in cluttered, complex environments.

The U.S. Army Research Laboratory of the U.S. Army Research Development and Engineering Command provides innovative science, technology and analyses to enable a full-spectrum of military operations. It serves as the bridge between the scientific and technical communities and the Army, and is the leader in providing innovative solutions for the current and future warfighter.

General Dynamics Robotic Systems is a part of General Dynamics Land Systems of Sterling Heights, Mich., a business unit of General Dynamics.

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### Training And Simulators

#### **SELEX Galileo-led Consortium presents vision for soldiers of the future to the European Defence Agency**

The SELEX Galileo-led AHEAD Consortium has presented to the European Defence Agency (EDA) a vision of how the modern dismounted soldier could be better equipped in the future. The Consortium has put forward a range of solutions designed to make troops significantly better protected by 2020.

The presentation is the final milestone in the Consortium’s contract, the completion of which has confirmed SELEX Galileo’s role at the forefront of research into soldier-protection technology.

The Company already plays a key role in enhancing dismounted soldiers’ situational awareness and protection with the Company’s electro-optical sensor suite for the Italian Army programme “Soldato del Futuro” (Individual Fire Control and Observation

System), and is looking to collaborate with partners at a European and international level to deliver the most effective protection systems to troops. Leading the AHEAD consortium to a successful conclusion has demonstrated the Company’s ability to lead a team of international industrial partners.

The presentation to the EDA included software simulation techniques that showed the potential improvements in detection and situational awareness that can be made available to soldiers, as well as a live demonstration of a helmet integrating a range of new sensors based on EO and acoustic technologies.

The presentation was delivered on the 27th and 28th May to the Contractual team lead by the contracting authority from the EDA. Present were the Executive Management Group, a group of government officials appointed by Italy, Germany, Poland, Portugal, France, the Netherlands and Sweden.

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### Exhibitions

#### **Oshkosh Defense to Showcase Vehicle Offerings for Wide Range of International Needs at Eurosatory 2010**



OSHKOSH, Wis. -- Oshkosh Defense, a division of Oshkosh Corporation, designs, produces and supports a diverse line of international vehicles that are available to governments worldwide, and will showcase a sampling of these vehicles at Eurosatory 2010.

Oshkosh will be unveiling the SandCat Mine-Protected Light Patrol Vehicle (M-LPV) as well as exhibiting its MRAP All-Terrain Vehicle (M-ATV), Medium Tactical Vehicle Replacement (MTVR) 8x8 Load Handling System (LHS) and a variant of its Family of Medium Tactical Vehicles (FMTV) at the event, which will take place June 14-18 in Paris, France. Oshkosh is exhibiting at booth #G441 in Hall 6.

“We pursue programs around the world, and international militaries continue to show interest in our advanced vehicle platforms that meet varying payload, protection and performance requirements,” said Ron Ziebell, Oshkosh Corporation vice president and general manager, Defense International Programs. “We look forward to meeting with current and potential global customers at Eurosatory to see how we can best meet their needs, from vehicle design and production to the complete spectrum of sustainment support.”

The SandCat M-LPV is a light patrol vehicle designed

to protect users from mine attacks and improvised explosive devices (IED), as well as standard ammunition threats and armor-piercing bullets, while offering superior off-road performance. The M-LPV can cover the needs of a wide range of security forces conducting various operations over the distances and terrain required by a light protected patrol vehicle's mission profile.

Improved performance is achieved by utilizing advanced composite ceramic armor materials and a blast-management system for the protective cabin, while optimizing the cabin's overall size and structure, with a growth capability against new and emerging threats. The vehicle seats four and has an option for two more. To date, SandCat vehicles have been sold to Sweden, Bulgaria, Canada and Israel.

The M-ATV provides MRAP-level protection capabilities and delivers enhanced mobility. The vehicle is built around a proven chassis and uses the Oshkosh TAK-4® independent suspension system to achieve a 70 percent off-road profile capability. This enhanced mobility allows the vehicle to overcome rocky, rutted terrain or deteriorating road networks in places like Afghanistan. To date, Oshkosh has received orders for 8,079 M-ATVs.

The MTRV 8x8 LHS has a payload capacity of up to 16.5 tons and, like all MTRV variants, uses the TAK-4 system to deliver exceptional off-road mobility for extensive cross-country operations. Oshkosh has produced more than 10,000 MTRVs, several of which have exceeded 70,000 operational miles on the challenging Afghanistan terrain, with readiness rates greater than 92 percent. The vehicle also is available in cargo truck, dump truck, tractor and wrecker (recovery) variants.

Oshkosh's FMTV is a series of 17 models and 23 variants for the U.S. Army. The company has received orders for more than 5,000 trucks and trailers to date. Variants include cargo, tractor, van, wrecker, tanker and dump truck, with payloads ranging from 2.5 tons to 10 tons. FMTV trucks feature a common, armor-ready cab and share a parts commonality of more than 80 percent for simplified maintenance and reduced supply-chain costs.

## Contracts

### Head of SOE KMDB spoke about execution of contract for supply of BTR-4



General Designer of the SOE KMDB Lt Gen Mykhailo

Borysiuk spoke at the business meeting on issues of development of Kharkiv region with participation of the First Vice Prime minister of Ukraine, where he spoke about the execution of the contract for supply of armored personnel carriers BTR-4 for Iraqi army.

At the end of August 2009 SFTF "Progress" and Ministry of Defense of Iraq signed the contract for supply of the armored personnel carriers from Ukraine to Iraq. The contract envisages supply of 420 armored personnel carriers BTR-4 and vehicles on its base for an overall amount of \$457 million with 20% advance with further payment of 70% of each batch and 10% of final payment of each batch.

The main contractor for the contract is the SOE KMDB that is simultaneously a designer and manufacturer of BTR-4.

As per the contract the following vehicles will be supplied between November 2010 and March 2012 in five batches:

- battle APCs – 270 pcs
- commander's APCs – 80 pcs
- command post vehicles – 30 pcs
- medical vehicles – 30 pcs
- recovery vehicles – 10 pcs
- group sets of SPTA and consumable items – 10 sets
- breakdown vehicles – 10 pcs
- integrated crew training simulators – 10 pcs

The contract cost also includes training of 90 persons of the customer crews for 2 months in Ukraine.

For execution of contractual obligations SOE KMDB, received \$72,209 million or 577,758 million hrn at the NBU exchange rate for the date of receipt of the funds, which makes 20% of the total contract cost, less all deductions stipulated by the Commission agreement provisions.

At present the first production prototype of BTR-4, which passed the initial tests, has been made. The first trials revealed extensive noisiness and power pack vibrations. Certain measures have been envisaged to remove these drawbacks.

Preparation for production of the first batch is nearing its completion. Agreements with almost all contractors have been concluded.

With the purpose of reduction of cost, SOE KMDB designed and SE CDB "Proton" (Kharkiv), FKOZ (Feodosia) as well as RUE DB "Display" (Belorussia), which supplies liquid-crystal monitors, mastered production of the fire control equipment. Panoramic systems may have to be arranged from abroad by foreign suppliers.

On behalf of the state the First Vice Prime minister promised to render assistance to SOE KMDB in execution of this contract.

## Exhibitions

### New Generation of Protected Patrol Vehicle launched into Europe

Today's battlefield is indeed hybrid and extremely hostile terrain with the predominant threat coming

from improvised explosive devices (IEDs), proxy bombs, suicide bombers explosively forged projectiles and land mines.



Universal Engineering has developed the RANGER family of armoured vehicles to overmatch this series of threats without compromising mobility or payload. The highly protected vehicle has been designed from first principles with crew survivability to the fore and the monocoque troop survival capsule is at the very heart of the machine.

RANGER project director John Scott said: ‘RANGER represents the next generation of protection, mobility and mission functionality. A complete family of vehicles including 4x4, 6x6 and 8x8 variants is available to ensure a broad spectrum of roles from troop carrier to ambulance and from patrol/reconnaissance to EOD support: RANGER is the solution to overmatching both today’s and tomorrow’s threats.’

Amazingly, Scott delivered the prototype vehicle in exactly one year since the decision to commit private venture investment was taken by Universal Engineering’s owners. Since then 2 more preproduction vehicles have been built – a further 6x6 and a new 8x8. These 2 vehicles incorporate significant modifications and improvements instigated as the result of informed feedback and potential user suggestions harvested over the past 12 months of demonstrations and trials.

‘The key to achieving this feat has been the close working relationship established with our partners in the supply chain.’ Scott said. ‘Creation UK, our design house, and HR4 Limited (ILS provider) have been involved since day one. We have also enjoyed outstanding advice and backup from MAN who provide the 540 horse power engine, ZF and Webster Drives who make the gearbox and drive train respectively, and Horstman Defence, the manufacturer of the vehicle’s suspension system. Ranger will now enter a period of intensive testing to demonstrate and prove the vehicle’s inherent reliability, maintainability and support solutions’.

Universal have recently also teamed up with SELEX Galileo who will provide the mission systems for the Ranger vehicle. SELEX Galileo will integrate a range of critical systems onto the Ranger, further boosting the vehicle’s already very high crew protection capabilities. These include the Company’s local situational awareness system, remote weapon station and driver’s night vision system. Together, the systems provide a 24 hour situational awareness capability with the ability to respond to threats while remaining under armour. For each specific vehicle programme, SELEX Galileo will also integrate third party and GFE mission equipment as

necessary to meet the individual customer requirements.

RANGER will be seen for the first time on continental Europe at the Eurosatory Exhibition from 14 to 18 June and will also be centre-stage on the Universal Engineering stand at Defence Vehicle Dynamics exhibition on 23 and 24 June 2010.



## Exhibitions

### Chemring unveils Multiple Effects Rocket System (MERS) – the next generation handheld rocket

Chemring Defence is unveiling the Multiple Effects Rocket System (MERS), the next generation, high performance handheld rocket system for the 21st century, at Eurosatory, Paris.

Using the latest technologies and experience from current operations, Chemring Defence has made radical improvements to the design of the 38/40mm handheld rocket. MERS is compact and lightweight to ease the infantry burden and offers the soldier greater tactical versatility, improved accuracy and built-in safety.

The significant new tactical advantage offered by MERS is that it leaves no smoke trail, which can be used by the enemy to trace and target the firer, thereby significantly reducing the danger of ‘Target back to the Firer’.

A major innovation is the introduction of a new Ground Target Smoke capability, in which the smoke payload can be fired at an angle along the ground to mark a target for directing fire or aerial attack. This is in addition to the handheld rocket’s standard capabilities for Illumination of forward ground and Signalling. MERS provides high performance Illumination with a ‘white light’ payload delivering 200,000 Candela (candle power) and the option of a covert ‘black light’ infra red payload.

Increased levels of accuracy and safety are achieved by MERS due to two key design features: the introduction of an advanced propellant means the payload travels at high speed, which makes it more stable and accurate in flight, particularly in wind conditions and secondly, a three-stage initiation procedure that can only be performed using both hands, and can be handled with equal ease by left and right handed users, thus increasing accuracy and reducing the risk of accidental firing.

Further innovation in the internal design of the rocket means MERS can be specified to reach a target at any distance between 300 and 600 metres to meet each customer’s exact requirement without the need to vary the length of the rocket packaging. This commonality allows MERS to be produced using fully automated manufacturing processes that deliver consistent high quality standards more cost effectively. Chemring Defence also plans to introduce a larger MERS with a 1000 metre range.

‘With MERS we have re-engineered a long established infantry product using new technologies to



achieve performance levels suitable for 21st century operations. Alongside MERS Chemring Defence is also unveiling at Eurosatory a new Compact Smoke Grenade, the first re-design of another widely used infantry product in decades. Both have been driven by lessons from current operations, which have highlighted the need to enhance the dismounted soldier's effectiveness and endurance", said David Codling, Sales and Marketing Director, Chemring Defence.



## Exhibitions

### Ocelot Aims for World Markets at Eurosatory

Following a contract from the UK MOD for the supply of two vehicles for test purposes, Ocelot, the advanced new light protected patrol vehicle, will be the focus of the Force Protection display at Eurosatory (Stand K441).

An all-new concept, Ocelot has been developed by Force Protection Europe Ltd and Ricardo plc to provide levels of survivability comparable with the Cougar family of vehicles, together with exceptional cross country mobility, flexibility and value for money. Accordingly, Ocelot is equally effective in a range of diverse environments, including mountains, deserts and urban areas.

Ocelot can be maintained and repaired quickly out in the field to ensure maximum availability, while its unique modular design enables the vehicle to be reconfigured in theatre within two hours to meet a variety of different roles, such as patrol, fire support and protected logistics.

Ocelot's capabilities have been proven by a sustained programme of blast, ballistic, automotive and manoeuvrability tests conducted since the summer of 2009. The vehicle is supported by a strong supply chain that includes QinetiQ, Sula Systems and Thales.

Force Protection Europe Ltd's Managing Director, David Hind, said: 'Ever since we launched Ocelot at last year's DSEi (Defence Systems & Equipment International) the vehicle has been attracting serious interest from around the world resulting in being down-selected for two key programmes, including Australia's Land 121 Phase 4 project. We firmly believe that Ocelot has defined the future for light protected patrol vehicles.'

Graeme Rumbol, Ricardo plc global vehicle product group director added: 'Ocelot has proven itself through the extensive programme of development testing carried out since the first prototype was unveiled less than a year ago. It is a uniquely adaptable and innovative defence vehicle platform with unparalleled potential across a range of roles. We are extremely pleased to be working with Force Protection Europe to develop further opportunities for this truly class-leading vehicle on a global basis.'



### Royal Marines are first to use new Sharpshooter rifle in Helmand



The first new infantry combat rifle to be issued to troops for more than 20 years has arrived in Afghanistan and is being used by Royal Marines from 40 Commando.

The Sharpshooter rifle fires a 7.62mm round and enhances accuracy of engagement during longer-range firefights.

The Sharpshooter's considerable range takes it into the realm of sniper territory, but it requires far less training, being more similar to the standard service rifle than the highly-specialised weapons used by those in the sniper profession:

Royal Marine Sergeant Baz Evans of 40 Commando said:

"I have fired over 1,000 rounds on the rifle in training; accurately hitting targets over 800 metres away. The new Sharpshooter rifle provides quick and accurate fire, with the flexibility of using it in the assault rifle role as well. It's hoofing."

More than 400 of the semi-automatic L129A1 Sharpshooter rifles have been bought as an Urgent Operational Requirement.

The Sharpshooter complements the already potent range of weapons used by our forces in Afghanistan, which includes:

- SA80 A2 assault rifles, which fire 5.56mm rounds
- Light Machine Guns, which fire 5.56mm rounds
- General Purpose Machine Guns, which fire 7.62mm bullets
- the Combat Shotgun, which fires 12-gauge shells
- the Sniper System, which fires 8.59mm bullets
- the Javelin Weapons System - the integrated fire-and-forget missile system

See 'Operations in Afghanistan: UK military equipment' at Related Links.

Colonel Peter Warden, Light Weapons, Photographic and Batteries Team Leader at Defence Equipment and Support, said:

"The Sharpshooter rifle is very capable and has been bought to fulfil a specific role on the front line in Afghanistan. It is a versatile weapon which will give our units a new dimension to their armoury. It will complement the SA80 A2 by adding to the weapons available to commanders on the ground. The Sharpshooter's capabilities are also complementary to the current Sniper System."



**Exhibitions**

**Patria presents a unique combination of Patria AMV and the new KONGSBERG PROTECTOR at Eurosatory 2010**



At the Eurosatory 2010 Patria presents the Patria AMV 8x8 Armoured Wheeled Vehicle together with the new KONGSBERG PROTECTOR Medium Calibre Remote Weapon Station (MC RWS) together with the KONGSBERG PROTECTOR Lite in a "Hunter-Killer" role.

In its "Nordic IFV –concept" Patria is combining the most modern combat proven armoured wheeled vehicle the Patria AMV 8x8 with a unique combination of the new KONGSBERG PROTECTOR Medium Calibre Remote Weapon Station (MC RWS) with a KONGSBERG PROTECTOR Lite in a "Hunter-Killer" role. The concept also features KONGSBERG Blue Force PROTECTOR, a near real-time battle management system distributing information on own and friendly positions in a network to reduce the risk for Blue-on-Blue incidents, as well as the Rheinmetall Defence Situational Awareness System (SAS) that provides 360° degree view. Together, with its main protection partner, IBD Deisenroth & Ekers Krutbruk Patria presents the next generation survivability concept applied on the Patria AMV, Armoured Modular Vehicle.

Being fully NATO compatible, Patria AMV fulfils the toughest procurement requirements of modern defence forces, such as increased mobility, effective protection, versatile adaptability and ability to use air transports. Patria AMV is a European solution with outstanding test results from all over the world and with well over 1300 vehicles contracted from the Finnish, Polish, Slovenian, Croatian, South African and United Arab Emirates' Defence Forces. Also, Patria is confident to succeed in the new tender process in Sweden as Patria AMV is considered to be a high quality vehicle proven in the international crisis management operations.

Patria is a defence, security and aerospace group with international operations delivering its customers competitive solutions based on own specialist know-how and partnerships. Patria is owned by the State of Finland and the European Aeronautic Defence and Space Company EADS N.V.



**Exhibitions**

**SPV 400 makes international show debut at Eurosatory 2010**

Today Supacat is submitting its formal bid in response to the UK Ministry of Defence's

competition for the Light Protected Patrol Vehicle (LPPV) Programme, offering the all-new, all British Supacat Protected Vehicle (SPV) 400.



The submission coincides with vehicle making its international show debut today at Eurosatory, Paris, 14-18 June.

The UK MoD had invited Supacat to participate in the competitive Tender for the LPPV Programme, which is being procured under an Urgent Operational Requirement for an initial batch of 200 vehicles to enter service in late 2011. This invitation followed the purchase earlier this year by UK MoD of two SPV400 vehicles from Supacat as part of the ongoing risk reduction activity being undertaken with both bidders on the LPPV programme.

The SPV400 has been purpose designed to provide troops with the protection and mobility needed against the threat from Improvised Explosive Devices (IEDs). The SPV400 combines an integrated blast and ballistic protection system, including all composite protected crew pod and V-shaped hull. It has exceptional all terrain high mobility performance, comparable to the Supacat designed Jackal and Coyote, and the agility to manoeuvre in tight urban environments.

"The SPV400 offers protection levels way beyond those available in the 7.5 ton light patrol class. With our protection partners, NP Aerospace, Supacat has designed a highly mobile vehicle with crew survivability built in from the outset", said Nick Ames, Managing Director, Supacat.

A modular and future-proofed design allows the SPV400 to be upgraded to meet new threats and requirements. The V shaped hull will protect the crew in an under-belly mine strike scenario. The modular approach will also enable the SPV400 to be repaired in theatre following mine blast incidents by replacing the damaged module(s).

"The modular approach reduces overall damage to the system and will allow LPPVs to be put back on the road quickly. With the SPV400, the MoD will not have to write a vehicle off each time there is a mine strike", said Nick Ames, Managing Director, Supacat.

The SPV400 is designed by Devon based Supacat, the world leader in high mobility, all terrain vehicles. Its armour protection partner is Coventry based NP Aerospace, which has designed the composite crew pod and protection system with access to the UK's classified armour technology. Supacat and NP Aerospace have formed an Alliance Agreement under which volume production will be conducted through the Alliance at NP

Aerospace's Coventry facility. Supacat and NP Aerospace have proven track records in supplying and supporting vehicles in service with British Forces in Afghanistan, with Supacat responsible for Jackal and Coyote and NP Aerospace for Mastiff and Ridgback.

All Intellectual Property Rights for the SPV400 are UK based with the automotive solution residing with Supacat and the protection system with NP Aerospace. The Design Authority is held by Supacat. This means the UK retains full control over future design upgrades and the SPV400 is free from US ITAR restrictions. Potential future export revenues will be retained in the UK. The selection of the SPV400 for LPPV would strengthen the UK's innovation and engineering skills base and support manufacturing jobs, sustaining between 1000 and 1200 jobs throughout the UK.

### Exhibitions

#### Hatehof Unveils Zibar Ultra-High Mobility Special Operations Vehicle at Eurosatory



Eurosatory, Paris -- Hatehof, a world leader in research, development and production of protected vehicles against conventional and unconventional threats, will introduce its new Zibar ultra high mobility multipurpose combat vehicle at this year's Eurosatory.

Intended primarily for use by special operations forces, law enforcement, reconnaissance and logistics units and as a platform for antitank missiles, Zibar enables remote operation of weapons systems, carries up to five soldiers and offers impressive off-road performance. The Zibar vehicle can be seen at Hatehof's booth F201-PE6B located outside.

"This vehicle was created to meet the needs of Special Forces worldwide," says Shimon Shacham, Hatehof's CEO. "This new vehicle offers a winning combination of maneuverability and mobility resulting in new levels of operational effectiveness." Shacham goes on to explain, "Our designs are based on modern and highly efficient engines and fully independent suspension, utilizing proven, high quality automotive components. These proven pieces combine to offer superior performance parameters, extremely high mobility and easily customized configurations, optimized for each customer without compromising quality standards, accessory levels and interior comfort."

With a gross vehicle weight of four tons, the Zibar has a 1.6 ton payload capacity. While it's fully air conditioned interior is designed for efficient operation in high desert temperatures, the vehicle boasts extreme off-road mobility with its customized engine mated to a four-by-four, automatic gearbox and a heavy duty transfer case. Off-road racing-derived design and automotive components enable Zibar to negotiate steep dunes and rocks. The vehicle boasts a 90 degree approach angle and an 80 degree departure angle, as well as a 37 centimeter under axel ground clearance. The vehicle is able to climb 0.75 meter high steps, cross 0.8 wide ditches and handle 60% side slopes. Additionally, it is designed to move through thick jungle vegetation, deep mud, and water up to 0.8 meter depth. Zibar has a seven second 0 to 100 km/hr acceleration capability, a 180 km/hr top speed, fully combat loaded, and it can travel over 700 kilometers on a single tank of fuel.

### Exhibitions

#### ST Kinetics Unveils New Bronco Variant Prototype at Eurosatory 2010

Paris -- ST Kinetics, the land systems arm of ST Engineering, unveils a new Bronco All Terrain Tracked Carrier (ATTC) variant prototype at Eurosatory 2010.

Designated the Bronco Fire Support Vehicle (FSV), the new Bronco variant is capable of superior fire support and greatly enhances the warfighters' lethality and survivability.

The Bronco ATTC is a proven armoured vehicle with a high payload of over 5 tons. The rubber tracks and articulated design enable the Bronco ATTC to traverse a wide range of terrains in extreme climatic conditions. The Bronco FSV inherits the unsurpassed payload and mobility of the Bronco ATTC. In addition, it incorporates of two Remote Control Weapon Stations (RCWS) on board to provide superior fire support to warfighters, making the Bronco FSV the most lethal all terrain vehicle in its class.

The front cabin of the Bronco FSV is fitted with the ST Kinetics 40/7.62 RCWS, while the rear cabin is armed with the ST Kinetics 50 RCWS. The 40/7.62 RCWS is the world's first dual-weapon RCWS to be mounted with the highly reliable CIS 40AGL and the 7.62mm coaxial MG, and is able to fire ST Kinetics' 40mm Air-Bursting ammunition. The 50 RCWS is mounted with the versatile CIS 50MG, which has an unique double belt-feed system for fast and easy switching of ammunition from standard ball rounds to Armour-Piercing Incendiary rounds or Saboted Light Armour Penetrator rounds for different levels of fire support.

Both the 40/7.62 RCWS and 50 RCWS are equipped with an advanced sighting and fire control system that enables the gunner to maintain line-of-sight with the target during day and night operations. Coupled with a video tracking feature, the gunner is able to achieve a



high hit probability even for moving targets.

"The new Bronco FSV, with its world's first dual RCWS design, is able to provide outstanding fire support to improve warfighters' lethality, while ensuring survivability, leading to mission success. The Bronco FSV is yet another testimony of ST Kinetics' commitment towards continual innovation to enhance the warfighter's effectiveness." -- SEW Chee Jhuen, President, ST Kinetics.

Other ST Kinetics exhibits on display at Eurosatory 2010 include:

- CIS 40AGL - Delivers accurate, intense and decisive firepower against enemy personnel and lightly armoured vehicles.
- 40mm SPARCS - Provides real-time situational awareness for the warfighter.
- Advanced Combat Man System - Enables network-centric warfare at the soldier level.

### Exhibitions

## Navistar Defense and Tatra Unveil Two Tactical Vehicles at Eurosatory

PARIS -- Navistar Defense, LLC and Tatra, a.s., today unveiled the ATX6 universal container carrier and the ATX8 troop carrier at the Eurosatory Exposition in Paris, France.

The team's tactical vehicles utilize proven Navistar and Tatra technology.

The vehicles on display include Navistar engines and other components in addition to Tatra's proven backbone-tube chassis design and independent suspension system. Tatra's chassis concept uses swinging half-axles for world class tactical vehicle mobility and added resistance against chassis wear and tear.

"The Navistar-Tatra alliance positions this team well to compete for new vehicle programs with U.S. and Allied Forces," said Archie Massicotte, president, Navistar Defense. "Both our companies have extensive histories when it comes to vehicle design, production and support and we are proud to display our combined expertise in tactical vehicle technology at this year's Eurosatory Exposition."

Under the strategic alliance formed in October 2009, Navistar and Tatra branded trucks will be marketed under Navistar Defense in all North American markets, which includes sales to the United States military and foreign military sales financed by the United States government. Tatra will also source parts and components through Navistar's global parts and support network for Tatra trucks delivered in markets outside of North America.

"Our technical and business teams have put their shoulders to the wheel to develop these vehicles in a matter of a few months," said Ronald Adams, board of director's chairman and CEO, Tatra. "It is gratifying to have the first two products ready for customers' review at Eurosatory. These are truly exceptional tactical vehicles that will be offered through the combined

Navistar and Tatra distribution channels."

Navistar and Tatra have also agreed to market and sell Navistar-Tatra trucks in their respective existing markets around the world. Navistar will manufacture vehicles.

### Exhibitions

## Plasan to Showcase a Range of Survivability Solutions at Eurosatory 2010

PARIS -- Plasan, a global leader in the field of combat-proven survivability and armor solutions for vehicles, airborne platforms and personal protection, will showcase its latest survivability solutions and armor technologies at Eurosatory 2010.

As a partner in the development and manufacture of such vehicles as the MRAP, TSV, M-ATV and SandCat FoV, Plasan's innovative armor technology and survivability solutions will be on display at a variety of booths and exhibits. Plasan maintains exceptional flexibility in vehicle design and survivability solutions for a wide range of today's unique battlefield requirements.

Plasan's focus in recent years has been the research of new materials and the development of new technologies in order to respond to the ever-changing requirements of militaries and peacekeeping forces around the world. Plasan will demonstrate exceptional survivability solutions designed to protect against mine attacks, IED's, standard ammunition and RPG through the application of advanced materials and technologies such as the Ceramic Composite armor, Blast Management Systems, EFP, Door Assist and Energy Absorbing Seats.

### Exhibitions

## BAE Systems Debuts new Tactical Remote Turret (TRT) at Eurosatory



PARIS, France -- BAE Systems is launching its newly designed tactical remote turret, the TRT-25, at Eurosatory in Paris. The turret is displayed for the first time on the Company's new RG41 vehicle.

TRT-25 is a remotely operated turret designed specifically to provide self protection and ground fire support for Light Armoured Vehicles (LAVs), Mine Protected Vehicles (MPVs) and Infantry Fighting Vehicles (IFVs). While its light weight reduces overall vehicle load, the turret packs powerful combat capabilities.

The TRT-25 draws on BAE Systems' experience in

the first time at Eurosatory.

previous remote turret technology development. It is designed as a high performance and effective threat neutraliser achieving a firing range of more than 2,000 meters, with day/night fighting and observation capability. The turret's control station can be integrated anywhere in the vehicle allowing for increased vehicle internal space for crew or extra payload. This simple adaptation to vehicles makes it suitable for deployment in multiple theatres.

"TRT-25 provides a low cost solution for both offensive and defensive situations. The highly accurate performance with simple-to-use operator interface makes this turret suitable for almost any encounter," said Dennis Morris, president of BAE Systems Global Tactical Systems.

The TRT-25's stabilisation provides full operation when on the move, with automatic optical target tracking after manual lock-on. This 'on the move' engagement and firing capability is significantly important in a hostile engagement. The turret has a video based electro-optical gunner sight and all cameras use auto-focus, with superior levels of detection, recognition and identification. A newly developed rapid engagement function, which is being patented by BAE Systems, will significantly reduce the time for target engagement. The laser range finder on the TRT-25 has a range in excess of 12km.

#### TRT-25 basic information

- Description: 25mm tactical remote turret.
- Height: 1.05m (driven by elevation specification).
- Width: 1.32m.
- Weight: 850kg (including ammunition and weapons of 400kg). Additional armoured protection can be added.
- Turret elevation: -10 to +65.
- Armament/Weapons: Dual-feed 25mm M242 Bushmaster cannon with 2 x 130-round bins, a 7.62 mm machinegun with 1 000 rounds, and 4 x 76mm smoke grenade launchers.

The turret can easily be adapted to carry other smaller calibre weapons. The system is equipped with electro-mechanical drives and sight equipment to allow for all round observation, fast reaction time and accurate firing.



### Exhibitions

#### BAE Systems Unveils Brand New 8x8 Combat Vehicle at Eurosatory



PARIS, France -- BAE Systems is launching its latest 8x8 addition to the battle-proven RG range of vehicles at the Eurosatory exhibition in Paris. The new vehicle, known as the RG41, is displayed for

The RG41 Wheeled Armoured Combat Vehicle features a unique modular mine protected design and integrated independent suspension and driveline. The vehicle is a cost effective and highly versatile, wheeled combat vehicle suitable for multiple theatres. With a semi-V shaped hull, high payload capacity, class leading turning circle and excellent power-to-weight ratio, the RG41 meets demanding mobility and protection requirements.

The vehicle's unique design means it is easy to maintain and repair in the field. The lower hull structure of the RG41 consists of five modular units joined together and bolted under the top structure of the vehicle. Any damaged modules can be removed and replaced individually with pre-fabricated replacement sections. This task can be completed by second line maintenance in an operational theatre, saving time and money.

"RG41 offers exceptional protection, capability and flexibility. Current conflicts require maintenance and repairs be done in the field and the RG41's unique design allows operators to achieve their missions while maximizing vehicle operational readiness. RG41 represents the ultimate synthesis of combat power and affordability, ideal for conventional and unconventional units," said Dennis Morris, President of BAE Systems Global Tactical Systems.

The RG41 can carry light and medium turrets and direct and indirect-fire weapons. Its design enables easy development for different variants. It can be configured as a command vehicle, section combat vehicle, ambulance, engineering vehicle or customised for various other customer missions.

#### RG41 basic information

- Wheels: 8x8
- Length: 7.78m
- Width: 2.28m
- Height: 2.3m
- Gross mass: 30,000kg
- Payload: 11,000kg
- Accommodation: Driver + 10 crew

The RG41 is one of a family of 8x8 vehicles which BAE Systems is involved in designing and developing. Each addresses different operational requirements, price and performance levels across the customer base.

### Defence Industry

#### ATK to Deliver Non-Standard Ammunition for Afghan Security Forces

Minneapolis -- Alliant Techsystems has received a \$41 million contract modification to supply additional non-standard (non-NATO) ammunition to the Afghan Security Forces (ASF), under an existing three-year contract with the U.S. Army.

Under the contract awarded to ATK in 2009 by the U.S. Army Contracting Command in Rock Island, Ill., ATK provides supply chain management, quality assurance and logistical expertise in the delivery of

non-standard small, medium and large caliber ammunition, as well as mortars and rockets, to Kabul for use by allied security forces.

"ATK established its small-caliber ammunition market leadership by serving the United States forces, and now, by drawing on our expertise in quality control, program and supply chain management, and world-class manufacturing, we are expanding to serve the needs of our allies around the world," said Mark Hissong, Vice President and General Manager of ATK Small Caliber Systems (SCS). "Timely delivery of quality munitions into the hands of those who protect freedom is a top priority for ATK."

## Contracts

### Oshkosh Defense Receives Awards Valued at \$173 Million to Supply New and Recapitalized HEMTT A4s to U.S. Army



OSHKOSH, Wis. -- Oshkosh Defense, a division of Oshkosh Corporation, has received a two awards valued at \$173 million from the U.S. Army TACOM Life Cycle Management Command (LCMC) for more than 600 new and recapitalized Heavy Expanded Mobility Tactical Trucks (HEMTT).

Oshkosh has the capacity and production expertise to remanufacture and recapitalize heavily used vehicles back to like-new condition, offering significant cost savings to the government and taxpayer. The vehicles are returned to Oshkosh, stripped to their frame rails and completely rebuilt, and upgraded to the next-generation A4 configuration if needed.

"We leverage our world-class operations to supply recapitalized vehicles that are as advanced, reliable and high-performing as our new vehicles, but at a reduced cost for our military customers," said Mike Ivy, vice president and general manager of Army Programs for Oshkosh Defense. "These vehicles undergo the same tests and inspections as new vehicles, and have the same bumper-to-bumper warranty, before being supplied to our Warfighters."

Under one award, valued at more than \$138 million, Oshkosh will produce and deliver more than 480 M983A4 HEMTT Light Equipment Transporters (LET) and one M1120A4 HEMTT Load Handling System (LHS). Production and delivery of these vehicles is expected to begin in October 2010 and be completed in August 2011.

For the second award, valued at more than \$34 million, Oshkosh will recapitalize and deliver 140 HEMTT A4 LHS and cargo truck variants. Work for this award will run June 2010 through March 2011.

The Oshkosh® HEMTT is the backbone for the U.S. Army's logistics fleet. HEMTT LETs support soldiers with the transportation of light equipment in challenging environments and as part of the Stryker Recovery System. The HEMTT LHS uses the Oshkosh-produced Multilift load handling system to lift and transport payloads of up to 13 tons. The HEMTT cargo truck is used to haul equipment and supplies.

## Defence Industry

### Soltam Upgrades the CARDOM 120mm mortar system to answer urgent Fire Support Needs in Theater



Yokneam, Israel -- Soltam Systems, manufacturer of Artillery Systems, Mortars, Ammunition and peripheral equipment has upgraded its battle proven CARDOM recoil mortar system to respond to an urgent operational requirement from theater for a rapid and accurate fire support capability.

Forces in Afghanistan require the ability to deliver immediate and highly accurate indirect fire with existing ammunition so as to preclude casualties in the civilian population and fratricide.

Soltam, delivering a complete fire support solution to "keep up with the forces", has modified the CARDOM to carry an integrated Fire Control System that provides rapid firing solutions, and 360° electric controlled auto-laying capability. The new system can be mounted on a ground mount for stationary base protection or can be mounted on 4X4 light vehicles for greater mobility.

The new system design allows for easy integration onto different platforms allowing armies to use existing inventories, thus providing a rapid reliable solution and reducing costs.

"Cardom is a dramatic change in operational concept, providing an organic capability for lower-echelon tactical forces without having to ask for fire support," said Soltam President David Marciano, a former director of the Israeli Ground Forces Materiel Command.

The US, Portugal, NATO, and the Israel Defense Forces (IDF) already benefit

from the mortar system's proven precision and reliability.

## Defence Industry

### Otokar Launches Arma 6x6 Armoured Vehicle at Eurosatory 2010



Otokar, the leader armoured tactical vehicle designer and manufacturer of Turkish Defence Industry, unveils its new ARMA 6x6 tactical wheeled armoured vehicle at Eurosatory.



Otokar also displays its worldwide known armoured vehicle "COBRA" and its mine protected armoured "KAYA" vehicle at the show in Paris, France, between 14th and 18th June.

The ARMA is the latest product of Otokar's design and development studies and a proof of Otokar's ability to leverage its engineering, manufacturing and expertise across a large portfolio of armoured tactical vehicles. ARMA is a new product family within the Otokar's tactical wheeled armoured vehicle range with modular multi-wheel configuration. ARMA vehicle platform with superior tactical and technical features will be an outstanding and cost effective product among competitive products. Thanks to the high level of ballistic and mine protection as well as, the outstanding design allowing the integration of various types of weapon stations and mission equipments, ARMA will be an adaptable platform for evolving mission needs in a modern battlefield.

The 6.4 m long, 2.7 m wide and 2.2 m high ARMA has an 18,500 kg combat weight and a payload of 4,500 kg and carries a driver, commander and eight dismounts in its fully NBC protected hull. The vehicle is C-130 air transportable in standard configuration.

ARMA's front two axles are steerable enabling it to make a turning radius of 7.85 m and the vehicle rides on independent hydropneumatic suspension, offering respectable off-road mobility and comfort. Tyre run flat capability and Central inflation system is supplied as standard. It can negotiate a 45-degree approach and departure angles leading onto 60 per cent inclines and 30 per cent side-slopes. It can also cross 1.2 m wide trenches and climb over 60 cm obstacles.

A 450 hp water-cooled turbo diesel capable of running on F-34 or F-54 fuel drives the wheels through an automatic gearbox and single-speed transfer box, giving it a top speed of 105 km/h and a power/weight ratio of 24.3 hp/tonne.

This also powers the onboard 24 V DC electrical system, which incorporates two maintenance-free 125 Ah batteries and a 3.3 kW converter.

The engine is located at the right front of the vehicle, allowing a comparably high internal volume to be efficiently and ergonomically used. With this internal layout, all the personnel especially the commander can keep eye contact continuously among each other.

ARMA can be driven in 6x6 or 6x4 modes depending upon the terrain conditions. The vehicle is amphibious and driven by 2 hydraulically driven propellers in water

allowing a high seagoing performance with a pivot turn capability. ARMA's ballistic and anti-mine protection is provided by high hardness monocoque steel hull and all personnel is seated on anti-mine seats.

ARMA vehicle's development started in 2007 as a company funded development project for home and export markets. Development studies from concept design till the end of test phases including qualification and validation processes, detailed design, computer aided engineering studies, are performed by Otokar.

ARMA 6x6 is ready for full scale production and the family will be complemented by an 8x8 version late in 2010.

#### 4x4 ARMoured VEHICLES

The vehicles on display at Otokar booth, Hall 6, G351, highlight Otokar's expertise and capability in armoured vehicle design, engineering and manufacturing. Otokar's products are widely known with their effectiveness through better mobility, higher protection as well as being affordable and capable solutions to meet the demands of modern warfare.

#### Other highlights of Otokar's presence at Eurosatory 2010 include:

**COBRA** : Otokar's worldwide known armoured vehicle COBRA is exhibited with remote controlled weapon station at Eurosatory. The demand to Otokar's 4x4 COBRA had increased in recent years. The COBRA is in duty in various countries including the European countries. The 4x4 COBRA armoured vehicle provides superior mobility, a high level of protection, adaptability to various missions and a low logistic footprint.

**KAYA**: Otokar showcases KAYA mine Resistant Troop Carrier at Eurosatory 2010. Kaya is designed to provide not only superior mine and ballistic protection but also high levels of cross country capability. KAYA provides mine and ballistic protection for the troops on all terrain conditions, while offering high mobility, ease of handling and outstanding crew comfort. Otokar's know-how and experience in mine protected vehicles gained with the COBRA, played an important role in the design and development process of the KAYA. In order to provide excellent cross country capabilities, the KAYA was developed on the Daimler Chrysler Unimog 5000 running chassis. Armored Cab and Crew Compartment are designed as two separate units to utilize and maintain the Unimog 5000's ultimate cross country capability. KAYA 4x4 mine resistant vehicle with its flexible body configuration can easily be configured for different missions along with varying user needs.



#### Defence Industry

#### Metal Storm Sets New Speed Record for 40mm Fire

Brisbane, Australia -- Metal Storm Limited is pleased to announce that it has set a new record for the speed at which it can fire 40mm grenades. On Friday, during firing tests toward its STORM40 grenade ammunition qualification, the Company

achieved burst-firing rates of over 10,000 rounds per minute (rpm) from a single barrel.

The test firings also proved that the STORM40 ammunition, which is currently being qualified for use in the Company's suite of 40mm grenade launchers, is capable of being fired from a 6 shot weapon. Importantly for weapon accuracy, the muzzle velocity of each shot was well within required military standards.

Metal Storm CEO Dr Lee Finniear said that Metal Storm had previously fired stacks of 3 and 4 rounds of 40mm ammunition at rates of up to 1800rpm. These tests showed that 6 shots at 10,000 rpm is achievable from each barrel.

"This is a very significant outcome" said Dr Finniear, "not only does it mean we can fire 40mm grenades 500% more rapidly than previously thought, but we can also increase our total High Explosive firepower before reload by at least 50% over current Metal Storm weapon configurations".

To draw a comparison, the in-service Mk19 Automatic 40mm Grenade Launcher can achieve up to 375rpm in short bursts and just 40rpm in sustained fire. Based on the latest results a 10-barrel Metal Storm system could deliver 60 grenades at a selectable fire rate of up to 100,000rpm. This rate of fire would enable the regular soldier to have a far greater controllable impact on his enemy - with his selection of 1 to 60 grenades exploding on target in as little as 0.04 seconds.

Dr Finniear noted that while the Company continues to focus on its current 3GL, MAUL(tm) and FireStorm(tm) products, it was vital that the ammunition design was able to support future weapon systems.

"Metal Storm has the ability to create weapons that are faster and lighter than any seen before. This latest test firing proves that the ammunition we are creating today will be able to meet the firepower needs of the weapon systems we will be creating tomorrow".

## Defence Industry

### BAE Systems and Iveco Defence Vehicles Pursue Marine Corps Personnel Carrier



PARIS, France -- BAE Systems and Iveco Defence Vehicles have signed a licensing agreement to form the basis of a business arrangement for the pursuit of the U.S. Marine Corps Personnel Carrier (MPC) programme, with a vehicle based on the SUPERAV 8x8.

In 2009, Iveco Defence Vehicles unveiled the

SUPERAV 8x8 as the newest MPC candidate. The SUPERAV has capabilities based on previously fielded vehicles that include enhanced survivability, mobility performance, and amphibious capability with growth potential.

The MPC is designed to fill the medium-armour ground vehicle gap and complements the capabilities of the Expeditionary Fighting Vehicle (EFV) and the Joint Light Tactical Vehicle (JLTV). It will be a flexible and highly mobile asset for the Marines that will be well protected, sustainable, networked and include a strong swimming capability.

Both BAE Systems and Iveco Defence Vehicles have extensive experience across a range of mine-protected and armoured vehicles, including several 8x8 models. This breadth of experience positions the team to jointly address the specific requirements of the MPC programme.

## Exhibitions

### Rosoboronexport at Eurosatory 2010

The Federal State Unitary Enterprise Rosoboronexport (FSUE) will display the most popular products, manufactured by the Russian defence industry, at the International Exhibition for Land, Airland, and Homeland Defence, Eurosatory 2010 to be held on 14-18 June, 2010.

Rosoboronexport has taken part in the Paris-based exhibition held under the auspices of the French Ministry of Defence since 1996. The Russian exposition is always in the spotlight due to a wide scope of exported advanced military arms and materiel. Rosoboronexport offers the most efficient, but at the same time cost-effective solutions, based on the real needs of potential customers.

Participants in Eurosatory 2010 will be able to familiarise themselves with actively exported Russian armour, including the T-90S main battle tank (MBT) and its T-90SK command tank version, BTR-80A armoured personnel carriers (APC), and armoured recovery vehicles. Foreign partners express much interest in the upgraded BMP-3M infantry fighting vehicle (IFV). The new digital ballistic computer, the infrared thermal imaging sight with the automatic target tracker, and the commander's thermal imaging panoramic sight with a built-in laser range finder significantly boost the efficiency of the BMP-3M's armament, comprising a 100 mm smoothbore gun/launcher, a 30 mm cannon, and a 7.62 mm coaxial machine gun. The BMP-3M meets every requirement, facing combat vehicles of this type at the present time.

Self-propelled artillery is represented by the 152 mm 2S19 Msta-S howitzer, the 120 mm 2S23 Nona-SVK gun/mortar system, and the Vena automated gun/mortar system. The latter two systems are capable of firing 120 mm projectiles and mortar bombs (including NATO standard ammunition) either directly or from defiladed emplacements. Visitors to Rosoboronexport's stand will also be able to take a look at specifications of the

Khrizantema-S anti-tank guided weapon (ATGW) system, capable of efficiently countering all modern tanks, soft targets, field fortifications, weapon emplacements, and enemy manpower.

The Smerch multiple rocket launcher system (MRLS) is yet another cutting-edge Russian weapon to be showcased at the exhibition. According to experts, it is one of the world's finest arms. The upgraded Smerch MRLS is capable of destroying almost any type of contemporary ground-based targets at minimum ammunition expenditure within a short time with a high accuracy at a range of up to 90 km.

The Iskander-E theatre missile system is expected to remain in the limelight. The system is designed to engage especially crucial pin-point and area targets with conventional warheads at a range of up to 280 km in heavy enemy countermeasures by day and night in any season. The most significant feature of the launcher is the fact that it carries two missiles, which can be launched one minute apart.

The Russian exhibition stand will also provide experts with information on the Mi-171Sh military transport helicopter and the Mi-35M combat transport. Designers developed these rotary-wing aircraft based on the vast experience, gained in the course of operation of previous versions in various climatic conditions throughout the world. The Mi-171Sh and the Mi-35M incorporate the greatest advantages, inherent in Russian-made helicopters, such as reliability, outstanding flight characteristics, and easy operation.

The Buk-M2E surface-to-air missile (SAM) system has good export prospects. It is the world's only medium-range SAM system capable of destroying both strategic and tactical aircraft, helicopters, cruise missiles, and theatre ballistic and air-launched missiles, including anti-radiation missiles, precision-guided munitions (PGM), and surface targets in heavy electronic countermeasures (ECM) and enemy fire.

Rosoboronexport will also demonstrate upgraded Kalashnikov AK-100 series assault rifles (5.56 and 7.62 mm AK-101, AK-102, AK-103, and AK-104), anti-tank guided missiles (ATGM), special small arms and hardware, radar systems, and other state-of-the-art pieces of Russian arms and materiel, including the 152 mm Krasnopol and the 122 mm Kitolov-2M Cannon-Launched Guided Projectiles (CLGP), and the 120 mm KM-8 Gran laser-guided mortar projectile.

Russia offers deep modernisation programmes for a wide range of Soviet- and Russian-made arms and materiel, with their objective being upgrading such weapon systems up to NATO standards. Support services, offered by Russian designers, ensure combat capabilities of military units, fielding upgraded weapons, and guarantee safe operation of such arms and materiel.

“We have recently pursued more sophisticated and advanced forms of cooperation with European partners, including research and development and joint ventures. We actively investigate the feasibility of joint defence cooperation projects in the interests of third countries. At the present time we really do reach a totally new level of

defence cooperation,” said Igor Sevastyanov, Rosoboronexport Deputy Director General and head of the delegation at Eurosatory 2010.

Defence cooperation between Russia and France is an excellent example of such teamwork. Taking into account the fact that 2010 is the Year of Russia in France and the Year of France in Russia, the exhibition will become another milestone in expanding and strengthening relations between the two states.

## Exhibitions

### Iraqi Counter Terrorism Commander to Present at Defense Conference in Washington Next Month

Washington, D.C. -- New-Fields Exhibitions, organizers of the 5th Iraq Aviation and Defense Summit (IADS), announced today that LTG Taleb Al-Kenani, Director General of the Iraqi Counter Terrorism Bureau (CTB), has confirmed to talk about the the Iraqi Counter Terrorism policy and Strategy, answer questions, and conduct one-on-one meetings with delegates at IADS, a two-day summit on July 22-23 in Washington, D.C.

Other high ranking officers and senior Iraqi government officials confirmed to speak at the 5th IADS include:

- General Anwer Ahmed, Iraqi Air Force Commander, Ministry of Defense
- MG Faisal Ghdban, Chief of Staff, Iraqi Air Force, Ministry of Defense
- Omar Adnan Huren Al- Huttaitawi, Director General, State Ministry of National Security Affairs
- Hameed Rashed , Director General of Political Security, State Ministry of National Security Affairs
- Staff MG Ali Hadi, Director M5 Strategy & Plans, Iraqi Joint Head Quarters
- Staff MG Kareem Mohammed Salloom Al-daffaie, Minister Advisor for Logistics Affairs, Ministry of Defense
- General Ahmed Hashem, Commander of Baghdad Operations Center Command, Prime Ministers Office
- LTG Riyadh Jalal Tawffeeq, Deputy Commander, Iraq Ground Forces Command
- BG Shihab Ali, Commanding General of Air Surveillances, Ministry of Defense
- BG Shwan Mudher Ali, Director of Air Logistics, Ministry of Defense
- BG Scott Hanson, Director of the Iraqi Training & Advisory Mission
- Saad Yousif, Political Advisor, National Security Council
- Hamza Shareef, Director General (International Policy), National Security Council
- Dr. Adnan Blebil, Director General, Iraqi Civil Aviation Authority
- Stafford Clarry, Director General, Erbil International Airport

The officials will give first-hand insights on the following important organizations:

- Coalition Military Assistance Training Team,



- organizes, trains, and equips the Iraqi Army
- Civilian Police Assistance Training Team, organizes, trains, and equips the Iraqi Police
- Coalition Army Advisory Training Team, builds the Iraqi Army
- Coalition Air Force Transition Team, builds the Iraqi Air Force
- Maritime Strategic Transition Team, supports the Iraqi Navy, Marines and Coast Guard
- Civilian Police Assistance Training Team, builds Iraqi police agencies
- Intelligence Transition Team, builds military and police information organizations
- Iraqi National Counter-Terrorism Task Force, assists Iraqi special operations
- Security Assistance Office, assists purchase of equipment and overseas training
- Joint Headquarters Assistance Team, advises the Iraqi Joint Headquarters
- Ministry of Defense Transition Team, advises the Ministry of Defense staff

### One-to-One Meetings

Scheduled one-to-one meetings with Iraqi officials and panel presentations will provide you insights and analysis of the current challenges facing Iraq Aviation, Security and Defense.

Scheduled meetings are on First-come, first-served basis.



### Defence Industry

## The Cockerill CT-CV (TM) Weapon System (advanced 105mm) successfully demonstrated its gun launched missile capability



CMI Defence presents in exclusivity at Eurosatory the Falarick 105, the new anti-tank guided missile launched from the Cockerill CV gun. It's in Scotland that CMI has demonstrated the effectiveness and accuracy of the CT-CVTM Weapon System gun launched missile which confirms the positioning of this turret system as an advanced 105 mm, the benchmark in large calibre weapon systems.

This GLATGM ability increases even more the CT-CVTM Weapon System's capability to provide modern armed forces with a fully effective response to demanding operational challenges.

It delivers immediate, precise and lethal effects against a comprehensive set of targets at short and extended ranges, based on a balanced combination of conventional and smart tank munitions, gun-launched missiles and heavy machine guns.

These effects are enhanced through a single

auto-loaded weapon system that allows the selective loading and firing of multiple ammunition options including gun-launched missiles, from under armour.

Co-developed with the State Kyiv Design Bureau "Luch", the Falarick 105 is a 105 mm calibre missile specifically designed to be launched from the Cockerill CV gun, itself a proprietary development by CMI Defence.

With its laser beam guidance system, the Falarick 105 is able to wipe out fixed & moving armoured targets, helicopters and fortifications at a distance of 5 kilometers. Its tandem hollow-charge warhead allows it to destroy targets under 550 mm of armour and behind ERA or their equivalent.

Its name refers to the falarica, a heavy javelin used by Iberians. Thanks to its long, thin iron head with a narrow sharp tip, it was an excellent armour-piercing weapon.



### Defence Industry

## SISU 8x8 Military Truck on tour in Norway



Supplier of protected Military Vehicles, Sisu Defence Oy, has presented an armoured SISU 8x8 Military Truck, loaded with Kongsberg Defence and Aerospace AS's NASAMS launcher, at "Transportmessa" -exhibition in Gardemoen, Norway, on 11.-13.6.2010.

At the exhibition the SISU 8x8 truck presented the highest protection level and mobility, thus raising well earned interest among the visitors at Norwegian Sisu importer's, Elverum Maskin AS, stand.

In connection with the exhibition at Gardemoen, the SISU 8x8 truck made some 4000 kms journey within Northern hemisphere. On the route the truck visited Lofoten isles to attend an annual Live Firing Exercise of NASAMS, arranged by Kongsberg Defence and Aerospace AS together with the Royal Norwegian Air Forces. The Live Firing event took it's place at Andvrya Test Center in Nordmela on June 9th, leaving the truck just one day in between to be driven down to Transportmessa over a distance of more than 1500 kms.

On the tour the SISU 8x8 off-road Military Truck again showed it's skills to manage long distances rapidly also on paved roads, as well as carry loads reliably in varying conditions.



**Defence Industry**

935-strong fleet.

**The DGA delivers the 200th VBCI to the French Army**



Paris -- The Direction generale de l'armement (DGA, French defence procurement agency) will deliver on June 23rd the 200th vehicule blindé de combat d'infanterie (VBCI, armoured infantry fighting vehicle) to the French Army.



In doing so, MAN will be accessing another market segment in South America. "Once again, we have succeeded in securing a key contract from a customer traditionally supplied by a competitor in the past," said Roberto Cortes, President of MAN Latin America.

The chassis are largely based on the new VW 8.150E CE model and were specially designed by working together with the customer. Armored trucks have to fulfill particularly high standards, which primarily include the driver's safety as well as both the robustness and reliability of the vehicles. Together with Grupo Protege's other vehicles, the MAN trucks will clock around 2.5 million kilometers every month in transporting the valuables of banks and commercial enterprises. The contract also covers servicing of the vehicles over the next five years.

Grupo Protege offers a wide range of private security services. It has more than 16,000 employees in 14 Brazilian states.



The VBCI is produced by Nexter Systems in association with Renault Trucks Defense. The DGA ordered all in all 630 VBCIs. The programme, including the development and the industrialization, amounts to 2,86 billion euros.

The first VBCI went out of factory in 2008, the last ones will be delivered by the DGA to the French Army in 2015. The VBCI is assembled on the Nexter's industrial site of Roanne in the Center of France, at the rate of a hundred vehicles a year. The VBCI program represents more than 8 million working hours for Nexter Systems, Renault Trucks Defense and their subcontractors.

The VBCI meets the current operational requirements of protection and evolution capacities. A 8x8 wheeled armoured vehicle, designed to replace the AMX 10 P, it exists in two versions: Command Post Vehicle (CVP) and Infantry Fighting Vehicle (IFV). The IFV version, of which 520 were ordered by the DGA, is equipped with a 25 mm turret and accommodates eleven soldiers. With a maximum combat weight of roughly 30 tons, the VBCI reaches a 100 kph top speed. It will be airportable in the A400M military transport aircraft. A real "home" for the infantrymen, the VBCI offers a high level of protection, of which a system of NBC filtration. It is equipped with an armoured structure resisting average calibre rounds and shrapnel. It also offers high protection against land-mines and improvised explosive devices and it has infrared decoys.

The 35th Régiment d'infanterie (based in Belfort, East of France), first combat unit equipped with this new armoured vehicle, will deploy two groups of VBCI in Afghanistan this summer.



**Defence Industry**

**Harris Corporation Awarded \$6 Million Order to Provide Falcon III Multiband Networking Radios to African Nation**



PARIS -- Harris Corporation, an international communications and information technology company, has received a \$6 million order to supply an African nation with Falcon III® RF-7800M multiband networking radios, universal remote controls and other tactical communications equipment.

The field-proven RF-7800M is a wideband tactical radio that provides warfighters with unprecedented situational awareness of the battlefield through wireless, high-bandwidth networked communications. The radio enables applications such as streaming video, simultaneous voice and data feeds, collaborative chat and connectivity to secure networks, delivering critical real-time information to the battlefield in a small, lightweight man-portable radio.

In addition, Harris is also providing the African nation with the Falcon II RF-5800H high-frequency radio. The

**Defence Industry**

**Safety first: MAN Latin America accesses market segment for armored trucks**

MAN Latin America is to supply Brazilian-based Grupo Protege with 427 chassis for armored trucks, replacing a substantial part of the customer's

RF-5800H provides secure beyond-line-of-sight radio communications in the most demanding battlefield environments. The radio features Third Generation-Automatic Link Establishment (3G-ALE), integrated data link protocols and embedded GPS receivers. The RF-5800H offers secure interoperability with the Harris AN/PRC-150(C) radio, which is widely deployed with U.S. and NATO forces operating in Afghanistan.

Harris RF Communications is the leading global supplier of secure radio communications and embedded high-grade encryption solutions for military, government and commercial organizations. The company's Falcon family of software-defined tactical radio systems encompasses manpack, handheld and vehicular applications. Falcon III is the next generation of radios supporting the U.S. military's Joint Tactical Radio System (JTRS) requirements, as well as network-centric operations worldwide. Harris RF Communications is also a leading supplier of assured communications® systems and equipment for public safety, utility and transportation markets — with products ranging from the most advanced IP voice and data networks to portable and mobile single- and multiband radios.



### Defence Industry

#### Patria received an order for Realtime Intelligence System

Patria has received an order for the Advanced Realtime Intelligence System (ARIS) ELINT system from a European customer.

The order covers serial production of undisclosed amount of ARIS system and integrating it to existing infrastructure. Deliveries take place between years 2010-2012. Being the first serial production order it is a significant milestone for ARIS that has been intensively developed in Patria's Systems Business Unit to be offered to international markets.

Patria's ARIS (Advanced Real-Time Intelligence System) is a world class ELINT system for technical electronic intelligence. ARIS can detect, measure, record and visualize modern LPI radar waveforms in wide real time bandwidth with its sophisticated signal processing and innovative 3-D user interface. The user interface connects to the receiver via network and adapts to different bandwidth allowing ARIS to be remote operable. ARIS is a perfect choice for mobile or fixed ELINT stations and updating legacy systems.

Patria is a defence, security and aerospace group with international operations delivering its customers competitive solutions based on own specialist know-how and partnerships. Patria is owned by the State of Finland and the European Aeronautic Defence and Space Company EADS N.V.



### Contracts

#### FLIR Receives Orders from USSOCOM

Portland, OR. -- FLIR Systems, Inc. (NASDAQ: FLIR) announced today that it has received a \$35.2 million firm-fixed price, indefinite delivery, indefinite quantity contract with an initial delivery order for \$20.9 million for its TALON(tm) system from United States Special Operations Command (USSOCOM).

The stabilized, lightweight, multi-sensor systems delivered under this contract will support the Long Range Ground Mobility Visual Augmentation Systems (LR-GMVAS) Program by providing ground vehicles with a stabilized, all-weather, day/night, high-resolution, thermal imaging capability.

"We are very proud of the confidence USSOCOM has in our systems, and we believe the TALON will lead to mission success," said Earl R. Lewis, President and CEO of FLIR Systems, Inc. "As industry trends continue to shift to lighter, compact systems with multiple payloads, FLIR Systems will dedicate significant research and development to provide mission specific technology to best support our customers."



### Robots

#### Lockheed Martin's SMSS Vehicle Demonstrates Autonomous Performance For Logistics Centers



DALLAS, TX -- Lockheed Martin recently proved in a series of demonstration tests that its Squad Mission Support System (SMSS) vehicle can perform detailed logistics tasks without human control. The testing was conducted at the Lockheed Martin facility in Littleton, CO, for several military attendees.

The SMSS vehicle performed all autonomous operations flawlessly, including:

- correctly following a road network,
- safely maneuvering through a building complex,
- avoiding obstacles inserted in its path, including mannequins simulating people,
- following a person using only optical tracking, exercising real-time obstacle avoidance, and
- navigating to a person who issued a "come-to-me" command.

SMSS also demonstrated its ease of operability in real-time controller-to-controller hand-offs, allowing different operators to take control of the vehicle as it arrived at new locations. Operators also disengaged



autonomy and went on board the vehicle to control it manually, showcasing user options in commanding the system.

“These demonstrations exemplify how the military can benefit from SMSS as an autonomous logistics vehicle to move parts, tools and materiel around fixed installations,” said Don Nimblett, senior Business Development manager for Lockheed Martin Missiles and Fire Control. “SMSS has proved through performance that our approach to autonomy is flexible and adaptable to a variety of platforms and missions. We’ve already proved the advantages SMSS can bring in the field through U.S. Army-funded Warfighter experiments. These recent trials showed how SMSS can perform in crowded, limited environments transporting tons of cargo.”

Attendees who witnessed the demonstration included representatives from the U.S. Army Maneuver Center of Excellence Solider Requirements Division, Combined Arms Support Command, Training and Doctrine Command Accelerated Capabilities Division, Rapid Equipping Force, Robotic Systems Joint Project Office, U.S. Marine Corps and the U.S. Air Force’s 60th Maintenance Group.

The SMSS was initially developed as a Lockheed Martin initiative to lighten the load for light infantry Soldiers and Marines. A highly mobile 6x6 vehicle, SMSS can carry 1,200 pounds of gear for a 9- to 13-person squad, and it can accompany the squad on many missions through heavy terrain. The fully loaded SMSS can be sling-loaded under a UH-60L helicopter, or carried internally in a CH-47/53 helicopter. The robotic capabilities and autonomy utilized on SMSS are also applicable to a much broader range of robotic applications, missions and vehicles.

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that employs about 136,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The Corporation reported 2009 sales of \$45.2 billion.

### Defence Industry

## Lockheed Martin and Expal to Pursue the Formation of a Union Temporal De Empresa (UTE) For the Spanish VBR Program

PARIS, FRANCE -- Lockheed Martin and EXPAL today announced the signing of a Memorandum of Understanding (MOU), intended to facilitate exclusive discussions for exploring the formation of a union temporal de empresa (UTE), or consortium, as the companies pursue the Spanish 8x8 VBR program.

This MOU expands upon the parties' current relationship, announced in May 2010, which defined EXPAL as having responsibility for the logistics and maintenance support of the AMV offering. Today’s

signing demonstrates Lockheed Martin’s commitment to relationships with Spanish companies.

“We are excited about the strong team EXPAL and Lockheed Martin are building for this program,” said Scott Greene, vice president of Vehicle Systems at Lockheed Martin Missiles and Fire Control. “This agreement provides an opportunity to leverage the programme management and system integration skills of Lockheed Martin and the logistics capabilities of EXPAL to provide high levels of system readiness for Spanish forces.”

“This agreement provides the foundation for EXPAL to participate in the leadership of the AMV project for the Spanish Ministry of Defense’s future 8x8 program,” said Manuel Garcia Sanudo, general manager of EXPAL. “Assuring national industry involvement at the highest levels of the program, this offer is based on a strong industrial platform and technology transfer process and will provide the Spanish Ministry of Defense with the best solution to protect its troops.”

The VBR global team, and the advantages it brings Spain, extends beyond Lockheed Martin and EXPAL. The other key members of our team include Patria, the vehicle OEM, and innovative Spanish companies UROVESA, Gutmar, Oliva Torras, Tecnobit and FASUR. The Patria AMV provides the Spanish Ministry of Defense a combat proven, low-risk solution for its Soldiers.

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### Future Technologies

## U.S. Army testing new JLTVs



ARLINGTON, Va. -- The U.S. Army and Marine Corps are using the newly built government prototypes of the Joint Light Tactical Vehicle to refine program requirements through rigorous ballistic, performance and reliability testing.

It's all part of an effort to field a next-generation tactical vehicle that can hit speeds of 70mph, withstand roadside bombs and other threats, drive through off-road terrain and fly through the air beneath a CH-47 Chinook or CH-53 helicopter, service officials said.

"The whole purpose of this TD (technology

development) phase is to get the requirements right," said Brett Johnson, JLTV chief engineer.

The three contractor teams for the current 27-month technology development phase -- BAE-Navistar, Lockheed-BAE and General Tactical Vehicles -- each delivered seven prototype vehicles engineered to reach an unprecedented blend of performance, payload and protection.

Following a Milestone C production decision in 2013, the Army plans to buy 55,000 JLTVs and the Marines plan to buy 5,500. Full production is slated for 2015.

"The JLTV Program is implementing the competitive prototyping policy for the Army. What we have in this technology development phase is three contractor teams to help us inform our requirements," said Lt. Col. Wolfgang Peterman, JLTV product manager. "As we get results from the testing, we will feed that back into our requirements."

The Army-led program will put the vehicles through blast, mobility and performance testing at Aberdeen Proving Ground, Md., and reliability testing at Yuma Proving Ground, Ariz., as part of an effort to refine the requirements for the next phase of the competition, the Engineering and Manufacturing Development, or EMD phase.

Ballistic hulls and armor coupons have already been tested; now the vehicles will undergo additional survivability testing against a variety of known and anticipated threats, program officials said.

A formal request for proposal for the EMD phase is slated for June 2011, to be followed by contract awards in December of 2011, Peterman said.

"When we go to EMD phase, it will be a full and open competition again. Our plan is to award two contracts for the EMD phase," he said.

The testing during the TD phase is aimed at lowering risk and production costs by finding and solving challenges which may arise earlier in the developmental process.

"We're developing prototypes and requirements for the next phase so that when we enter the next phase we will have a low-risk program," said Dean Johnson, Marine Corps deputy program manager, JLTV.

The vehicles are built with 85-percent common parts. For example, all of the JLTV variants are built with a 2500 series Allison 6-speed automatic transmission.

There are three different variants or categories of JLTV:

- Category A is a four-person general purpose vehicle with a curb weight of 13,000 pounds and the ability to carry 3,500 pounds of payload and 3,500 pounds of add-on armor.
- Category B is six-person infantry carrier with a curb weight of 15,000 pounds. It is able to add 4,500 pounds of payload and 4,000 pounds of armor.
- Category C vehicle is a two passenger utility vehicle with a short cab/open bed for hauling equipment or putting on shelters. Category C has a curb weight of 15,000 pounds can carry 5,100 pounds of payload with crew, fuel, gear and a full

compliment of armor.

In addition, the Army and Marine Corps are preparing to accept delivery of a new Enhanced Protection Variant of the JLTV, which is a modified Category A vehicle designed with additional protections. Each of the vendors will deliver an Enhanced Protection Variant in the next several months, program officials said.

### Engineering Challenge

The JLTV is engineered to push the envelope of technological possibility and build a light tactical, mobile vehicle which has the ability to thwart IEDs and other kinds of attacks.

"The basic challenge that we faced was trying to create a total integrated prototype, not so much a particular challenge with a subsystem but rather putting all the systems together and still meeting our full payload, full protection and full performance envelope," said Brett Johnson.

The vehicles are built with variable ride height suspension designed to give the chassis the ability to raise and lower off the ground depending on road conditions. The suspension can raise and lower the vehicles from five inches off the ground to fit on some of the Marine Corps ships all the way up to up to 22 inches off the ground for maximum protection from under blast attacks and IEDs, Brett Johnson said.

"Two of the vendors chose an air-bag style suspension to raise and lower the vehicle which you see on commercial trucks. The third one chose a hydro-pneumatic strut with a compressible fluid to raise and lower the vehicle," he said.

Each one of the prototype vehicles has four-wheel independent suspension which uses a double-wishbone racecar-like suspension -- two wishbone-shaped structures that work to keep the vehicle's wheels in a perpendicular position to the ground, Brett Johnson said.

Also, all the vendors employed a central tire inflation system which is an on-the-fly system that can regulate tire pressure; the system can adjust tire pressure from higher pressures for higher speed conditions on flatter roads to much lower pressures in soft soil such as sand or mud, said Brett Johnson.

Instead of having a belt-driven alternator, the vehicles are built with an integrated generating system that is sandwiched between the engine and transmission.

"A flat alternator is more efficient. These are very efficient machines for generating power, much more than a belt-driven machine," said Brett Johnson.

The JLTV has a requirement to generate 30 kilowatts of exportable power -- to include 10 kilowatts of on-board 28-volt DC power.

"There's a point at which alternators reach their maximum. We have as big as 500 amp alternators out there; the problem is they take a lot of RPMs in the engine to keep the speed high enough on a belt-driven system to get the power out of them. Once you get past about 1500 RPMs -- you are racing the engine. These systems can generate steady stream of three to four times as much power at 1300 RPMs," said Brett Johnson.

There is a requirement for a general range of 400

miles in this phase, but that will likely lower to 325 after looking at how much fuel the vehicles can carry, he said.

### International Efforts

The U.S. and Australia have entered into a Land Force Capability Modernization Project Arrangement for the TD phase of the JLTV, effective as of January of last year.

The Australian vehicles will feature right-hand operation, but the vehicles will maintain 90-percent commonality with the left-handed prototypes. In addition, the Australian vehicles will not exceed a 20 kg weight difference. Australia has contributed \$30 million to the JLTV effort.

"We want transportability and reliability as well. We decided to invest in the U.S. program because their program meets a lot of our requirements. We are fighting the same fight and facing the same threats that the U.S. Army faces," said Australian Army Lt. Col. Robin Peterson, JLTV program manager.

The U.S.-Australian collaboration is aimed at reducing risk, lowering costs and enhancing testing and simulation for both countries.



### Defence Industry

#### ITT KONI Announces New Shocks for Armoured Vehicles

Oud-Beijerland, NL Holland -- ITT Corporation, the world leader in shock absorber technology, has released a new series of shock absorbers designed for heavy military vehicles that have off-highway and rugged terrain performance requirements.

These new shock absorbers, on display at the Eurosatory 2010 show, will help customers achieve the mobility requirements necessary to successfully execute extreme missions involving military ground vehicles.

The new 93 Series piston is 33 percent larger than the popular 92 Series, but still encompasses the same features and benefits customers have come to expect from ITT's smaller shock absorbers.

"As more armour and equipment are put onto military vehicles, the requirements to control larger and heavier vehicles becomes increasingly challenging," said Justin McCoy, Koni's International Defence sales manager. "The new 93 Series gives customers the ability to control these large vehicles, while still offering the ability to perform at a high level in extreme conditions."

KONI's military shock absorber design includes components that can survive in high heat applications – which is a must for military vehicles traveling in and out of theatre. The new series also includes a piston design that makes digressive forces for added pitch and roll control. This helps with performance over rough terrains and on off-road surfaces. It can be configured in both twin-tube and mono-tube body styles, depending on available space.

KONI Defence shocks have been used by various prime contractors including Oshkosh Defense, BAE Systems and Renault Defence.



### Defence Industry

#### BAE Systems – Navistar Defense – ArvinMeritor Team Delivers Australian Joint Light Tactical Vehicle Prototypes



ARLINGTON, Virginia -- BAE Systems, through its U.S. Combat Systems business, along with partners Navistar Defense and ArvinMeritor, delivered three right hand drive operation configured Joint Light Tactical Vehicle (JLTV) prototypes in a ceremony today in West Point, Mississippi.

Each of these prototypes will be sent to Australia for durability testing that mutually supports both U.S. and Australia interests.

The BAE Systems - Navistar - ArvinMeritor team handed over a Category A General Purpose vehicle, a Category B Command and Control on the Move and a Category C Utility vehicle. The vehicles are designed to be highly compatible with the U.S. variants, ensuring interoperability between forces, yet tailored specifically to meet the needs of the Australian military.

"Our team has taken a user-centric design approach that provides the foundation for a future family of vehicles that can be modified to meet the needs of our military as well as those of our global allies," said Ann Hoholick, vice president and general manager of New Vehicles and Amphibious Systems for BAE Systems. "We look forward to continuing to improve and enhance our offerings as we receive feedback from our military customers."

In January 2009, the U.S. and Australia entered into a Land Force Capability Modernization Project Arrangement for the Technology Demonstrator phase of the JLTV program, enabling tactical vehicle interoperability and integration between U.S. future forces and Australian land forces.

"Australia's participation in the JLTV program will help reduce overall program risk through the testing and evaluation of additional prototype vehicles," said Mark McCoy, the U.S. Army's product manager for JLTV. "As our military prepares for future coalition operations, similarity of tactical vehicle solutions across allies will enhance global interoperability and reduce the maintenance and logistical burden."

The JLTV prototype vehicles will undergo reliability and blast testing in Australia, as well as tropical environment testing.

"Lessons from recent conflicts highlight the importance of protected mobility in the modern battlefield," said Australian Army Lt. Col. Robin Petersen, JLTV Cooperative Program Personnel and



Australian JLTV Program Manager. "The requirements of the JLTV program closely align with our requirements; we face similar capability gaps and threats."

BAE Systems is Australia's largest defense company, employing more than 6,000 people who support customers at 100 locations across Australia. As a global company, BAE Systems draws on the resources and strengths of its people around the world to help deliver the most efficient, value-for-money solutions to the Australian Defence Force.

The team builds off the three companies' current leadership in armored and tactical vehicle development and support. Combined, the BAE Systems - Navistar - ArvinMeritor team maximizes JLTV program value through proven capabilities, lean manufacturing and extensive worldwide logistics support.

#### **About BAE Systems**

BAE Systems is a global defense, security and aerospace company with approximately 107,000 employees worldwide. The Company delivers a full range of products and services for air, land and naval forces, as well as advanced electronics, security, information technology solutions and customer support services. In 2009 BAE Systems reported sales of J22.4 billion (US\$ 36.2 billion).

#### **About Navistar Defense**

Navistar Defense is an affiliate of Navistar International Corporation (NYSE: NAV), a holding company whose subsidiaries and affiliates produce International brand commercial and military trucks, MaxxFORCE brand diesel engines, IC Bus brand school and commercial buses, Monaco RV brands of recreational vehicles, and Workhorse brand chassis for motor homes and step vans. It also is a private-label designer and manufacturer of diesel engines for the pickup truck, van and SUV markets. The company also provides truck and diesel engine service parts. Another affiliate offers financing services.

#### **About ArvinMeritor**

ArvinMeritor, Inc. is a premier global supplier of a broad range of integrated systems, modules and components to original equipment manufacturers and the aftermarket for the transportation and industrial sectors. The company marked its centennial anniversary in 2009, celebrating a long history of 'forward thinking.' The company serves commercial truck, trailer and specialty original equipment manufacturers and certain aftermarkets, and light vehicle manufacturers. ArvinMeritor common stock is traded on the New York Stock Exchange under the ticker symbol ARM.

already contracted within the frame of several acquisition programs - some of them being deployed in Lebanon and Afghanistan - FN Herstal announces the introduction of the newly developed deFNder medium remote weapon station that provides optimized remote firing capabilities while keeping the operator fully secure and safe from harm.



The deFNder is capable of integrating any FN Herstal machine gun up to .50 cal, including the exclusive M3P machine gun, which has a unique firing rate of 1,100 rounds per minute and features extended operation angles [-42°; +73°]. The deFNder is therefore well suited for:

- self-defense, fire support and combat missions – also in urban environments – when mounted on light, medium or heavy vehicles
- turret onto turret applications
- border control or critical infrastructure protection missions

The deFNder features a universal cradle accepting any FN machine gun from 5.56mm MINIMI up to .50 cal or 40mm AGLs. The cradle is mounted on a soft mount to ensure optimized firing capabilities and reduced level of shocks and vibrations. The weapon station does not exceed 120 kg in weight (without weapon and ammunition) and 640mm in height. It comes standard with a CCD and thermal uncooled camera.

A number of options enhance the effectiveness of the deFNder. These include:

- IR thermal cooled camera
- Laser Range Finder (LRF) and ballistic computer
- Ballistic protection
- Higher ammo box capacity
- Two-axis gyroscopic stabilization
- Smoke grenade launcher kits
- Weapon protective cover
- Target tracking and autoscanner

With this new medium remote weapon station, FN Herstal expands its line of deFNder remote weapon stations, that already includes the deFNder Light (formerly known as LRWS or Light Remote Weapon Station) firing 5.56mm or 7.62mm FN infantry machine guns, and definitely positions itself as a major player in this arena.

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### **Defence Industry**

#### **500th Jackal Rolls Off Babcock Production Line**

Babcock has delivered its 500th high mobility transporter (HMT) vehicle, of which the majority and best known is the Jackal weapons mounted 4x4 patrol vehicle<sup>1</sup>, since the original contract to produce the vehicles under an MoD Urgent Operational Requirement (UOR) contract for Afghanistan in 2007.

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### **Defence Industry**

#### **FN Herstal Unveiled New Line of deFNder Remote Weapon Stations at Eurosatory 2010**

Taking advantage of its experience in the field of Remote Weapon Stations with more than 630 units

Jackal vehicles are produced by Babcock under an alliance with Supacat, the prime contractor and design authority. Supacat is responsible for design, development, prototyping, integration and programme management, while Babcock takes responsibility for detailed production planning, purchasing and manufacture at its Devonport facility.



The vehicles are built by a dedicated team of up to 130 Babcock employees at Devonport working on a pulse production line, along with a smaller project management team of some 25 people.

The pulse production line involves dividing the total manufacturing activity into a series of 12 equally balanced packages or 'cells', and the vehicle is physically moved, or 'pulsed' from one area assembly to the next on a daily basis. Application of a 'lean' philosophy has identified and eliminated any non value-adding activities, and serves to ensure that the demanding delivery schedules and critical quality and reliability requirements are met. This is coupled with highly effective supply chain management to reduce lead times, ensure quality and reliability, manage obsolescence, and ultimately drive down the cost of construction and ownership.

Production runs at a rate of one vehicle per day. Under the existing contract, a further 45 Jackal 2a vehicles are to be delivered by August 2010.

Babcock Land Systems Director Chris Dunn comments: "The Jackal vehicle has been a resounding success, having proved its versatility, combining speed and manoeuvrability with unparalleled cross-country performance over Afghanistan's harsh terrain. We are delighted to be working in alliance with Supacat to deliver these vehicles reliably and consistently within the shortest possible timescales. Further, we have established Babcock as a company that can be relied upon to deliver vehicles of exceptional quality at record pace and, being OEM-independent, we are also talking to other vehicle designers and prime contractors about building their vehicles for upcoming programmes in the UK and abroad."



## Defence Industry

### Supacat shows All-British, All-New SPV400 contender for UK MoD LPPV at DVD 10

Supacat is showing its all-new, all-British SPV400 contender for the UK Ministry of Defence's competition for the Light Protected Patrol Vehicle (LPPV) Programme at DVD, Millbrook.

Last week it submitted its formal bid for the Urgent Operational Requirement for an initial batch of 200 vehicles for service entry in late 2011. The SPV400 is on display on Supacat's stand OR9.

Recent blast test results have underwritten Supacat's philosophy of future proofing the SPV400 design by aiming for protection levels above the LPPV requirement to provide unprecedented levels of protection and mobility for a vehicle in its 7.5 ton class. The SPV400 combines an integrated blast and ballistic protection system, including a protected all composite crew pod and V-shaped hull. Its exceptional all terrain, high mobility performance is comparable to the Supacat-designed Jackal, and it has the agility to manoeuvre in tight urban environments.

UK companies, Supacat and NP Aerospace, are respectively world leaders in high mobility, all terrain vehicles and in composite armour protection systems. NP Aerospace designed the SPV400's composite crew pod and protection system with access to the UK's classified armour technology. The materials used offer protection from a range of threats and at much lower weight than a traditional steel design.

Devon based Supacat and NP Aerospace have formed an Alliance Agreement under which volume production will be conducted through the Alliance at NP Aerospace's Coventry facility. Supacat and NP Aerospace have proven track records in supplying and supporting vehicles in service with British Forces in Afghanistan, with Supacat responsible for Jackal and Coyote and NP Aerospace for Mastiff and Ridgback.

"With NP Aerospace, Supacat has purpose designed the SPV400 with crew survivability built in from the outset to provide troops with the protection and mobility they need against the threat from Improvised Explosive Devices", said Nick Ames, Managing Director, Supacat.

A modular and future-proofed design allows the SPV400 to be upgraded to meet evolving threats and requirements. The V shaped hull protects the crew in an under-belly mine strike scenario, while the modular approach enables the SPV400 to be repaired in theatre following mine blast incidents by replacing the damaged module(s).

The selection of the all-British SPV400 for LPPV would strengthen the UK's innovation and engineering skills base and support manufacturing jobs, sustaining between 1000 and 1200 jobs throughout the UK. Over 90% of the SPV400 supply chain is UK based.

All Intellectual Property Rights for the SPV400 are UK based with the automotive solution residing with Supacat and the protection system with NP Aerospace. The Design Authority is held by Supacat, which guarantees the UK retains full control over future design upgrades and the SPV400 is free from US ITAR restrictions. This also ensures potential export revenues will be retained in the UK.



## Defence Industry

**BAE Systems Receives \$71.1 Million to Provide Support and Upgrades to Mine Resistant Ambush Protected Vehicles**

ARLINGTON, Virginia -- BAE Systems has received a \$44 million contract modification from the U.S. Marine Corps Systems Command to provide field service support and instructor services for mine resistant, ambush protected vehicles.

The company also received a \$27.1 million contract to equip U.S. Army MRAPs with combat-proven Check-6® thermal camera systems that enhance mission effectiveness and soldier safety.

"Our field service representatives and instructors are working side by side with the service members who use and depend on these vehicles," said Ann Hoholick, vice president and general manager of new vehicles and amphibious systems for BAE Systems. "We're there to share our vehicle expertise and to make their lives easier as they prepare to protect us."

More than 200 BAE Systems field service representatives and instructors are deployed to support service members in Iraq and Afghanistan. Living alongside the soldiers, Marines, airmen, and sailors gives them a unique perspective and ability to support their missions. Work under this contract modification also is being performed now on military installations in the U.S. and will continue until December 2010.

BAE Systems' Check-6 camera system gives MRAP occupants day, night, and all-weather visibility, enabling combat crews to "see" outside the vehicle while remaining within its protective armor. Each system consists of an infrared camera and a control box. Field service representatives will install the systems, perform engineering upgrades and troubleshooting, and train U.S. troops to drive and maintain the vehicles. The company will deliver almost 4,000 Check-6 systems as upgrades to existing MRAPs.

"Before BAE Systems created the Check-6 system, soldiers couldn't see what was behind them without exiting the vehicle," said Lila Hillin, the company's Check-6 program manager. "Check-6 protects crews by providing them with high-performing electronic situational awareness that's critical in today's combat environments."

The Check-6 camera is completely contained in the vehicle's taillight housing and can be readily adapted and installed on most current and future Army vehicles with no modifications to the vehicle structure. A reliable, low-cost rear-visibility solution, the system contains long-wave infrared sensors molded into the housings of the vehicles' tail lamps.

The system, currently fielded on the M1 Abrams, Stryker, and the MRAP all-terrain vehicle, fits into taillight housings common to more than 200,000 military vehicles. BAE Systems expects to deliver more than 15,000 Check-6 systems for a total order value of \$147 million by the end of 2010.



## Defence Industry

**Lockheed Martin Delivers Right Hand Operation JLTV Technology Development Vehicles To U.S. Government For Testing**

SEALY, TX -- Lockheed Martin today delivered two right hand operation Joint Light Tactical Vehicles (JLTV), and a companion trailer, to the U.S. Army and U.S. Marine Corps and representatives of the Australian Army for Technology Development (TD) phase assessment and testing.

The vehicles, representing two of the JLTV payload category variants, were presented to representatives of the U.S. Department of Defense and the Australian Department of Defence in an acceptance ceremony at teammate BAE Systems' production facility in Sealy, TX.

The two variants included a JLTV Category B Command and Control on the Move and a Category C Utility vehicle, which is designed with a focus on payload. All vehicles feature right hand operation, but are otherwise identical to the U.S. vehicles. The U.S. Army and U.S. Marine Corps JLTV test team will begin reliability and performance evaluations upon receipt of the vehicles.

"Today's ceremony demonstrates our commitment to provide the Australian Defence Forces with a mature, low-risk family of vehicles, backed by over 70,000 miles of rugged and robust in-house testing," said Steve Ramsey, vice president of Ground Vehicles at Lockheed Martin. "With improved situational awareness, enhanced mission effectiveness and improved survivability, these JLTVs designed for the Australian Defence Forces will provide their testers a glimpse into the future of battlefield mobility."

Mark McCoy, the U.S. Army's product manager for JLTV, highlighted the advantages of international participation in the JLTV program, specifically noting how "participation can help reduce overall program risk through the testing and evaluation of additional vehicles."

"As our military prepares for future coalition operations, similarity of tactical vehicle solutions across allied forces will enhance global interoperability and reduce the maintenance and logistical burden," added McCoy.

The U.S. and Australia entered into a Land Force Capability Modernization Project Arrangement in January 2009 for the TD phase of the JLTV program, enabling tactical vehicle interoperability and integration



between U.S. future forces and Australian land forces.

“Recent conflicts have highlighted the importance of protected mobility in the modern battlefield,” said Australian Army Lt. Col. Robin Petersen, JLTV Cooperative Program Personnel and Australian JLTV Program Manager. “The requirements of the JLTV program are closely aligned with our requirements; Australia faces similar capability gaps and threats.”

Since October 2007, Lockheed Martin-Team JLTV has invested in the design and build of seven test vehicles, representing various configurations of the Service’s JLTV Category A, B and C variants.

The Lockheed Martin-led JLTV Team includes:

- BAE Systems, providing advanced armor solutions and production facilities for high volume assembly.
- Alcoa Defense, supplying materials experience, design services and aluminum components that give the vehicle its structural strength at reduced weight; and JWF – Defense Systems, offering state-of-the-art machining and cost-effective fabrication.
- Lockheed Martin, serving as the prime contractor and design agent, providing systems engineering, platform integration, design expertise, advanced systems, and program and supply chain management.
- Should the U.S. and Australia continue their JLTV partnership into the EMD phase, Lockheed Martin intends to include the strength of Australian industry in the JLTV design for both U.S. and Australian vehicles.

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that employs about 136,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The corporation reported 2009 sales of \$45.2 billion.

### Defence Industry

#### Force Protection Receives \$15.4 Million Award for Additional Field Service Support Related to Ongoing Modernization of Cougar Fleet

LADSON, S.C. -- Force Protection, Inc., a leading designer, developer and manufacturer of survivability solutions and provider of total life cycle support for those products, today announced it has received a modification to contract M67854-07-D-5031 from the United States Marine Corps Systems Command for additional field service support.

The contract modification provides for 43 field service representatives and associated support for installation of modernization kits and to conduct general maintenance for Cougars located in Afghanistan and Iraq. The modification has a firm fixed price value of \$15.4 million and is scheduled for completion by June 2011.

Randy Hutcherson, Chief Operating Officer of Force Protection, commented, “Recognizing the critical

importance of this asset in its long-term operational strategy, the Marine Corps is continuing its comprehensive program to enhance the Cougar fleet with the latest technologies to ensure success in the field. We take pride in offering the warfighter a unique and proven solution that has saved countless lives, and we look forward to further supporting our customer’s ongoing initiatives.”

### Defence Industry

#### SFC secures Bundeswehr order for portable all-in-one power solution



Brunnthal/Munich, Germany -- SFC Smart Fuel Cell AG, technology and market leader for mobile and off-grid power solutions based on fuel cells, has received another order by the German Bundeswehr.

SFC delivers autonomous power generating systems for Bundeswehr operations abroad. The energy solution ordered is based on the portable JENNY fuel cell which is successfully sold by SFC to soldiers as mobile off-grid power source for over a year now and is deployed in various international defense missions worldwide. In combination with the SFC Power Manager, an intelligent converter which assures optimal operation of available consumers, it builds a strong energy network for power supply in the field. The order volume is over 220,000 Euro. The delivery of the systems takes place in 2010.

The portable JENNY fuel cell by SFC Smart Fuel Cell is a small, under 2 kg lightweight power generator for soldiers and applications in the field. It can either be worn directly on the body in a belt or operate devices unmanned in the field. Because of its outstanding properties it was multiply and internationally awarded, most recently by the U.S. Department of Defense Wearable Power Prize and the Wall Street Journal Technology Innovation Award. Its usage in combination with the SFC Power Manager provides soldiers in multi-day missions with weight reduction up to 80 percent compared to conventional energy supply such as batteries. Power generation inside the JENNY fuel cell is silent, non-detectable without harmful fumes. Energy supply is fully automatically and without any user intervention over long periods of time.

The energy solution based on the JENNY fuel cell ordered within this contract can also be deployed undercover as a protection against environmental influences or reconnaissance. A challenge which is mastered by the JENNY fuel cell thanks to its innovative technology which is based on SFC’s year-long

experience in developing reliable power supply solutions for demanding applications. „It is not enough to simply perfect a technology. It has to perform exactly according to expectations of the user in the particular application scenario“, says Dr. Peter Podesser, CEO of SFC Smart Fuel Cell AG. "The superior product features of the system enable longer mission duration at low detectability and thereby increase soldier's safety in the field. Based on successful fielding, we have a reason to anticipate that this decision can lead into further procurement".



## Defence Industry

### Successful launch of new PROTECTOR MC RWS at Eurosatory 2010



KONGSBERG's largest remote weapon station, the PROTECTOR Medium Caliber RWS, was presented for the first time to the European market at Eurosatory 2010.

One model was unveiled at General Dynamic's stand mounted on Mowag's new Piranha Class 5 wheeled armoured vehicle. The second model was showcased at the Finnish defence industry company Patria's stand, mounted on a Patria AMV 8x8 Armoured Wheeled Vehicle.

#### Unique features

Rune Werner, Executive Vice President at Kongsberg Protech Systems, explains the unique features of this new member of the PROTECTOR family:

"PROTECTOR MC RWS is a light weight turret solution with a flexible structure that can be tailored to meet specific vehicle signature and protection requirements. The medium caliber cannon and coaxial machine gun combined with optional non-lethal effects provides the vehicle crew the necessary tools to engage in a wide spectrum of situations and to conduct Escalation of Force."

Being a world leader in remote weapon stations, KONGSBERG had a total of 16 PROTECTOR models exhibited at various stands. In addition, KONGSBERG showcased army command and control information systems, defence communications and its world leading air defence system, NASAMS.

#### Defence leading technological innovation

"What has driven technology forward is the defence and aerospace industry," says Walter Qvam, CEO of KONGSBERG. "It you are interested in technology, I cannot imagine any larger gathering of technologically

interesting objects than what you will find exhibited here."

Mr. Qvam, who visited Eurosatory for a couple of days, explains that a lot of the products that KONGSBERG now is selling to the civil market, through Kongsberg Maritime and Kongsberg Oil & Gas Technologies, initially was developed by the defence side of the company. "Thus, it is definitively an advantage for a high-tech company like KONGSBERG to be part of the defence industry," he says.

Eurosatory, the world's premiere defence exhibition, was held in Paris 14-18 June 2010. It is one of the most important meeting places for people in the defence industry and showcases the newest trends and developments in the industry.



## Defence Industry

### First deliveries of the counter-mining system SOUVIM 2



Development of SOUVIM 2, a mine path clearing system designed and manufactured by MBDA since 2008, has just been completed.

Two units of this land vehicle set will be delivered very shortly to the DGA, the French armament procurement agency and will undergo final qualification testing before delivery to the French Army. In line with the DGA's aim, the French Army will be ready to deploy this system on foreign theatres in 2010.

SOUVIM 2 was designed for use in mobility support missions, allowing quick clearing of mined paths over long distances behind the lines: over 100 km of track cleared daily, with extensive counter-mining capabilities. The SOUVIM 2's performance is currently unequalled.

The system relies on the combined action of two vehicles towing mine-activation trailers. The first vehicle is designed to roll over a pressure mine without activating it. It tows a first "mine-triggering trailer" (RDM) whose weight will trigger pressure-sensitive mines and thereby secure the second vehicle's progress. This latter vehicle tows two further RDMs whose different wheel bases help cover the whole width of the track to be cleared.

#### About MBDA

With industrial facilities in four European countries and within the USA, MBDA has an annual turnover of €2.6 billion and an order book of €12 billion. With more than 90 armed forces customers in the world, MBDA is a world leader in missiles and missile systems.

MBDA is the only group capable of designing and

producing missiles and missile systems that correspond to the full range of current and future operational needs of the three armed forces (land, sea and air). In total, the group offers a range of 45 missile systems and countermeasures products already in operational service and more than 15 others currently in development.

MBDA is jointly held by BAE SYSTEMS (37.5%), EADS (37.5%) and FINMECCANICA (25%).

## Defence Industry

### Latest counter-IED equipment showcased



Tackling the threat from improvised explosive devices (IEDs) was top of the agenda at the MOD's Defence Equipment and Support showcase event, Defence Vehicle Dynamics (DVD), this year. Report by Sharon Kean.

New Minister for Defence Equipment, Support and Technology, Peter Luff, formally opened this year's show at the Millbrook vehicle testing ground in Bedfordshire.

Mr Luff was then given a demonstration of some of the latest counter-IED (C-IED) equipment being used by British troops and met soldiers who had survived IED blasts thanks to the heavily armoured vehicles in which they were travelling.

Speaking at the event he said:

"Tackling the IED threat is vital for us to make military progress. C-IED is not just about the bomb disposal expert defusing a bomb, vital and dangerous though that role is. It is about making sure that our soldiers have a range of tools, tactics and techniques available to them."

Mr Luff was given a guided tour of the five pieces of equipment that make up Talisman, the newest military solution to the IED problem.

The five elements consist of two enormous armoured vehicles, a JCB digger, a bomb disposal robot and a UAV (unmanned aerial vehicle).

The Talisman system is currently being used by Royal Engineers to clear and build safe routes around Helmand province in Afghanistan.

A Mastiff armoured vehicle and its crew act as Talisman's eyes, with video screens inside the rear compartment of the truck displaying aerial video footage gathered by a Honeywell T-Hawk UAV.

Another armoured vehicle known as Buffalo has a remote-controlled, extendable, pronged arm attached to the front, which is used to comb or 'rummage' the ground, detecting signs of IEDs.

The JCB digger is used to fill in ditches or potholes that might prevent soldiers or vehicles from moving

forward and the Talon remote-controlled robot gives troops the safer option of remaining out of harm's way when trying to deal with any devices they find.



Group Captain Paul Ridge, the head of the Military Manoeuvre Support Team that spent around 18 months developing the Talisman system, said the aim was to enable soldiers to move around the battlefield more easily:

"It's a range of equipment that has been brought together to make a system which allows early detection and the choice of either avoiding or destroying the IED.

"It can be used on its own or in support of other vehicles. And the whole system can be operated from under armour. It's just one part of the contribution towards counter-IED."

Soldiers from 1st Battalion The Royal Welsh who survived two IED blasts in two days while in Afghanistan met the minister and described how the heavily armoured vehicles in which they were travelling probably saved their lives.

Fusilier Danny Hughes, who was travelling in one vehicle when it hit a roadside bomb, said:

"The Mastiff is worth its weight in gold. The second time it happened there weren't any injuries either, it was almost a case of 'here we go again', that's another few hours until we can have a cup of tea."



The battle to beat the IEDs is the driving force behind an MOD contract for a tranche of 200 new Light Protected Patrol Vehicles.

Two companies, SupaCat and Force Protection Europe, are competing for the contract and displayed prototype models of what they hope will be the next



generation of Light Protected Patrol Vehicles (LPPVs).

The vehicles will be used for a variety of patrols and so must be tough enough to cope with cross-country terrain, but also enable the troops inside to engage with the local people they encounter in more urban areas.

General Sir Kevin O'Donoghue, Chief of Defence Materiel and the Head of Defence Equipment and Support, said:

"As well as its protection against blasts, the LPPV must be able to operate in the harsh conditions of the desert and tight urban environments."

Mr Luff added:

"We will agree a contract for an initial tranche of 200 vehicles under an Urgent Operational Requirement funded from the Treasury Reserve later this year."

The first batch of vehicles is required for training by the end of 2011.



At the DVD event Mr Luff also announced a contract for more than 140 extra Jackal 2A weapons-mounted patrol vehicles in a deal worth about J45m, bringing the number of Jackal vehicles for Defence to over 500, and an extra 28 Wolfhound heavy tactical support vehicles under a J20m deal.

Meanwhile, the MOD is reducing the weight troops on the front line carry with improvements to current and future infantry combat and support kit.

Currently, the average weight of equipment carried by an infantryman is around 66kg, but innovative weight-saving schemes have shaved more than 4.5kg from this. New kit being delivered in October could reduce this by a further 8kg. Measures implemented include:

- trials of new lightweight patrol rations for troops in the field that weigh less than 1kg, compared with a 24-hour ration pack that weighs around 3kg;
- new longer-life batteries to power radios and other equipment; and
- a new battery recharging system which reduces the number of spare batteries required.

After inspecting some of the equipment at the annual DVD event and talking to soldiers and suppliers, Minister for International Security Strategy, Gerald Howarth, said:

"While the modern combat soldier is better equipped than ever before, this has brought about its own challenges - mainly an increase in the weight being carried.

"The welfare of our troops is paramount and so the work being carried out here to reduce this burden is essential to both the physical and mental well-being of our troops fighting on the front line in what can be 50-degree temperatures. The other improvements

announced today are a further demonstration of our determination to equip our forces on the front line with the kit they need."



A newly-formed project team, - the Integrated Soldier System Executive, based at Defence Equipment and Support in Bristol, has been leading on the work to reduce the weight carried on the front line.

Along with lightening a soldier's load, the welfare of personnel operating in remote locations is being improved through increasing the number of e-bluey computer terminals to enable them to communicate with loved ones and installing more showers, sinks and toilets in forward operating bases. The new ablutions facilities will be sent to Afghanistan later this year.



## Contracts

### Force Protection Receives \$19.6 M for Additional Field Service Support

Force Protection, Inc., a leading designer, developer and manufacturer of survivability solutions and provider of total life cycle support for those products, today announced it has received a modification to contract M67854-07-D-5031 from the United States Marine Corps Systems Command for additional field service support.

The \$19.6 million firm fixed-price contract modification provides for 216 field service representatives and associated support for continued installation of Independent Suspension System ("ISS") kits on the Cougar Mine Resistant Ambush Protected ("MRAP") vehicle fleet at the MRAP Sustainment Facility in Kuwait. Work is scheduled to begin on July 1, 2010 and be completed by September 30, 2010.

Randy Hutcherson, Chief Operating Officer of Force Protection, commented, "Given the austere environment in Afghanistan, the installation of ISS kits on the Cougar has proven to be a critical addition to the vehicle's capabilities. Combined with unsurpassed levels of survivability and sustainability, we are proud to provide a highly-sought solution for our troops in harm's way. Optimal vehicle suspension is just one component of the Marine Corps' ongoing and comprehensive program to enhance its Cougar fleet, and we are continuing our leading role in this important initiative."



## General Dynamics UK debuts Scout SV turret at DVD 2010

General Dynamics UK will unveil its Scout SV turret for ASCOD SV to visitors at DVD (Defence Vehicle Dynamics) 2010 tomorrow, demonstrating the advanced development of the Scout SV programme in its readiness to deliver the vehicle to the British Army on time and on budget.

The turret will be unveiled in mock-up form on the General Dynamics UK stand in the presence of members of the turret design team from Lockheed Martin UK Ampt Hill and Rheinmetall.

The ASCOD SV turret has been designed to maximise space and protection for the crew inside. The large turret-ring diameter of 1.7m is wider than that on older vehicles such as Warrior, and the design increases space further by placing the main ammunition feed under armour outside the turret crew compartment. This gives soldiers considerable room for modern display screens, comfort for long periods inside the turret and ease of movement, even wearing full body armour and future wearable systems. With the need for military electronics ever-expanding on operations, the turret allows significant room for new systems to be fitted without compromising the design of the vehicle.

The turret is designed around the CT40 Cased Telescoped Cannon System, which was successfully integrated and fired by turret provider Lockheed Martin UK Ampt Hill at the start of this year. The CT40 cannon is common to the Scout SV and Warrior CSP programmes and the MoD will benefit significantly from the commonality of work done by Lockheed Martin UK Ampt Hill on both programmes.

The Scout turret delivery team includes: DSG for assembly integration and test; Rheinmetall Land Systems for the turret structure, cannon mounting structure and CT40 integration; Ultra Electronics for power management; Curtiss Wright for turret drives and stabilisation control; Meggitt for the ammunition handling system; Moog for the slip ring; and Lockheed Martin UK Ampt Hill for fire control and training and as the turret integration authority. Over 75% of this work will be done in the UK.

The ASCOD SV's hull is also designed to accommodate a 2.1m turret ring, easily carrying, for example, a 120mm gun so offering the option of an early, low-risk path to a Direct Fire variant. The vehicle's 42-tonne capability allows it to carry such a gun at this higher weight without compromising full performance or its ability to carry the full Scout SV armour.

The turret design combines with the high power-distribution capability of the General Dynamics UK Core Infrastructure Distribution System (CIDS) open Electronic Architecture (EA), which allows new-generation systems to be plugged in as required and power generation to be expanded.

## DRS Technologies Provides Critical Power Technology to US Marine Corps for On-The-Move Power Needs of Tactical-Wheeled Vehicles

PARSIPPANY, N.J. -- DRS Technologies delivered its On-Board Vehicle Power (OBVP)-equipped High Mobility Multipurpose Wheeled Vehicle (HMMWV) to the United States Marine Corps on Monday, June 28, 2010.

This modified HMMWV delivers more than 30 kilowatts of electrical power for on-vehicle and off-vehicle use. The Marine Corps will evaluate technology provided by two suppliers and will subsequently select one manufacturer to deliver five additional vehicles for continued testing and trials.

If all contract options are exercised by the Marines, a total of sixteen vehicles would be modified to the OBVP configuration.

DRS' innovative approach designed and integrated in its Huntsville, AL facility, delivers significant advantages in terms of size, weight, power, combat versatility and cost efficiencies over currently fielded systems.

Working with multiple prime contractors and OEMs, DRS is evolving its technology for a broad range of tactical and combat vehicles across the U.S. Military.

DRS' OBVP offers field commanders operational flexibility, reliability and agility, while reducing maintenance and support costs over other power-upgrade solutions that add belts, pulleys and shafts. OBVP reduces the airlift and logistics footprint and their related cost when towed generators are not the best power-needs solution.

Using DRS' technology and in close coordination with OEM transmission partners, it is now possible to achieve power levels of more than 30 kilowatts in a HMMWV sized vehicle and up to 125 kilowatts in combat sized vehicles, such as a Stryker and MRAP. Equipping vehicles with more electrical generation capabilities means that increased numbers of technologically advanced devices can be placed in the hands of service men and women.

DRS' OBVP system is delivered as a factory or depot modification kit that features a transmission-integral generator (TIG). The TIG is fully embedded in the existing transmission bell housing and its application does not affect existing driveline geometries.

On-the-move power is available to support enhanced operations in both current and future force vehicles. OBVP may be used to provide expeditionary power for Tactical Operations Centers (TOC), expeditionary field hospitals, or other battlefield power requirements. This capability substantially reduces or eliminates the need for traditional towed generators in an expeditionary force.

**Robots**

**Autonomous Solutions to Develop 3D Visualization System for MTRS Talon**

LOGAN, UT -- Autonomous Solutions today announced it has begun a program with the EOD Robotics Group at ARDEC (Picatinny Arsenal, NJ) to transition its real-time 3D visualization technology to the MTRS Talon

This suite of sensors and software enables an EOD technician to have a real time 3D ‘bird’s-eye’ view of the target environment and the robot’s position in it. The resulting enhanced situational awareness will enable users to more easily and quickly perform complex driving and manipulation tasks.

The underlying technology was developed by Autonomous Solutions under contract with NAVIODTECHDIV using the iRobot Packbot as the initial development platform. The technique fuses 3D point cloud data from stereovision, lasers, or other 3D sensors, with 2D camera images to create a textured ‘3D photograph’ – almost like having a CAD model of the world, viewable from any angle. As the robot moves through its environment, 3D data is stitched together to create a 3D map of the robot’s route. The resulting world model can be used for situational awareness, for measuring objects and distances in the world, and for enabling manipulation and navigational autonomy.

Autonomous Solutions will develop its implementation for the Talon robot with the help of engineers at the ARDEC EOD Robotics Group, who have developed their own interface to the base platform. The resulting retrofit package will have a minimal impact on the base platform. It will feature low power consumption, low weight, and minimal logistics footprint. Its use will result in no loss of current functionality, and it will be easily installed in the field.

“It’s an important part of ASI’s mission to transition the results of our research projects into products that can help soldiers in the field. Our intent is to be in a position to offer a cost-effective retrofit package for the Talon robot by the end of the year”, said Mel Torrie, CEO of Autonomous Solutions.

**About Autonomous Solutions, Inc.**

Autonomous Solutions is a market leader in vehicle automation, multi-vehicle command and control, and SAE-JAUS implementation. ASI has successfully delivered hundreds of unmanned vehicle systems on nearly 50 different types of vehicle platforms for both military and commercial applications on vehicles ranging from 2 lbs to 300 tons.

two contracts from the Project Manager for Maneuver Ammunition Systems (PM MAS) at Picatinny Arsenal, N.J., for production of 30mm M789 High Explosive Dual Purpose (HEDP) ammunition and Phase III development of 25mm scalable fuze technology. The total value of the two contracts is more than \$14 million.



The 30mm M789 HEDP is the primary tactical round of the Apache AH-64 helicopter, widely used in Iraq and Afghanistan operations. The Apache’s ability to provide accurate air support with minimal collateral damage has led to increased use and volume demands for M789 ammunition. In response to the increased demand, the U.S. Army has contracted General Dynamics to establish a full-production capability for the M789 cartridge.

“Establishing a second, independent production line for the M789 eliminates potential single-point production failure and gives the Army more resources to meet the growing ammunition needs of the warfighter, quickly and efficiently,” said Tim McAuliffe, vice president and general manager of medium caliber ammunition for General Dynamics.

In addition, General Dynamics was awarded the Phase III development effort of the Scalable Medium Cannon Caliber Airburst Fuze Development Study. General Dynamics has successfully completed Phase I and II of the study. An essential overall objective of this development effort is to create scalable fuze technology that provides a plug-and-play capability for munitions ranging from 25mm to 50mm calibers.

The successful development of the 25mm fuze technology will provide the U.S. Army Bradley Fighting Vehicle and U.S. Marine Corps LAV-25 with the capability to reach targets in defilade via an airburst projectile. The technology also provides the ability to detonate a projectile within a hard target by using a selectable or delayed point detonation feature. The scalable technology has already been successfully demonstrated across a variety of weapon platforms from 25mm to 40mm and has the ability to be inserted in future platforms such as the Army’s Ground Combat Vehicle.

“The advancement of scalable technology will allow the military to upgrade the capability of their legacy systems while easily integrating onto future weapon platforms,” said Mr. McAuliffe.

**Contracts**

**General Dynamics Awarded \$14 Million by U.S. Army for 25mm and 30mm Ammunition**

ST. PETERSBURG, Fla. -- General Dynamics Ordnance and Tactical Systems has been awarded

**Defence Industry**

**IBD’s Presentation of 4th Generation Armor Technologies at Eurosatory 2010**

The significant advantages of IBD’s 4th generation armor technologies were presented at various locations at this year’s Eurosatory trade show in Paris. New options in the design of survivability kits



can be applied to an extended variety of platforms due to the use of IBD's nano-technologies in ceramics and steel.

IBD succeeded in making them producible in large quantities at a reasonable price. The variety of platforms can even be topped when the AMAP-ADS Active Defense System is included in the design of the survivability kits.

As an example a LMV 4x4 vehicle in the 7 to range, equipped with a combination of these advanced technologies, was presented at the IBD booth:

- Ballistic protection levels up to STANAG 4569 Level 4 were installed on the vehicle to show the potential of the new ceramic materials.
- A high level mine protection kit (STANAG 4569 Level 2b/3b underbelly and Level 3a/4a for the wheel house), combined with an IED-protection was shown.
- New developments in glass materials were demonstrated with transparent armor conforming to STANAG 4569 Level 3+.
- With the integration of the AMAP-ADS Active Defense System it is now possible, to protect even such a light vehicle against shaped charges. The system was demonstrated in live demonstrations during the show. This demonstration made the tactical advantage clear: after the attack the vehicle remains mobile and the crew can continue its mission.

Taking all these technological options together, IBD has a much higher flexibility to realize tactical benefits for the user by balancing higher protection levels and the need for more payload and higher mobility. The options shown on the LMV can be scaled to any other platform.

Examples for these advanced protection concepts were shown during the event on various platforms, from light 4x4 vehicles to main battle tanks:

- IVECO LMV 4x4 with gunner protection
- IVECO VTMM 4x4 - New nanometric steel technologies, advanced composite IED protection
- IVECO SUPERAV 8x8
- IVECO ASTRA - Cabin with modular, ballistic and mine protection. Add-on protection kit storable in containers
- Renault Sherpa APC 4x4 - Ballistic protection
- Renault VAB 4x4 - Ballistic, IED and mine protection
- Renault VAB 6x6 - Ballistic, IED and mine protection
- Patria AMV with new turret
- Leopard 2 A4 Evolution - Modular Protection Concept against large caliber KE and shaped charge ammunition, IEDs (blast and fragmentation), EFPs, Heavy mines, Bomblets.

#### **Disposable Windshield Protection (DWP)**

Another novelty presented for the first time is the Disposable Windshield Protection (DWP). This protection is intended to avoid chipping of the windshield by stones. The damaged sheet can easily be taken off from the windshield and be replaced by a new one.

This cost effective solution can also be used for other exposed transparent armor such as driver periscopes. It

saves the costs for expensive replacements of transparent armor and also time for the repair.

## **Defence Industry**

### **Oshkosh Defense Announces New Delivery Orders For Heavy-Duty Army Vehicles**



OSHKOSH, Wis. -- Oshkosh Corporation announced today its Defense division has received two delivery orders from the U.S. Army TACOM Life Cycle Management Command (LCMC) for the U.S. Army's Family of Heavy Tactical Vehicles (FHTV).

The two delivery orders are valued at roughly \$600 million, and extend production for nearly 1,900 new and recapitalized severe-duty Heavy Expanded Mobility Tactical Truck (HEMTT) A4 vehicles, the backbone of the Army's logistics and resupply fleet, and more than 530 Palletized Load System (PLS) trailers.

"For more than 30 years, Oshkosh HEMTTs have provided unparalleled performance to U.S. soldiers," said Charlie Szews, Oshkosh Corporation president and chief operating officer. "The production of these next-generation vehicles and support trailers, as well as the recapitalization of existing HEMTTs to like-new condition, signifies the fleet will continue to support and protect Warfighters for decades to come."

Through Oshkosh Defense remanufacturing and recapitalization services, heavily used vehicles are returned to Oshkosh, stripped to their frame rails, completely rebuilt to like-new condition and upgraded to the new A4 configuration. For the Oshkosh® HEMTT A4, changes include a more powerful drivetrain; improved suspension; a fully air-conditioned and armor-ready cab; and other structural changes to make in-the-field installation of add-on armor quicker and easier. Recapitalized vehicles are reset to zero miles and zero hours, and offer a significant cost savings compared to new vehicles.

HEMTT deliveries begin in July 2010 and continue through September 2011. PLS trailer production will start in June 2011 and continue through October 2011.