

# Army Guide monthly



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## Defence Industry

### International Export Markets Beckon for FPE's World-Leading Next-Gen Vehicle



Ocelot makes its first public appearance since the MoD awarded the Light Protected Patrol Vehicles (LPPV) programme contract to FPE.

Force Protection Europe's contract winning light protected patrol vehicle, Ocelot, will be appearing at this year's International Armoured Vehicles exhibition on 8 and 9 February at ExCeL in London. This will be the first time that the vehicle has been on public view since Force Protection Europe was awarded a contract last November to supply the UK MoD with 200 of the vehicles.

The first batch of vehicles, which will be known as Foxhound by the British Army, will be delivered to the Army's training fleet later this year with the final vehicles scheduled to be completed by Spring 2012.

Designed, developed and built in the UK by survivability specialist Force Protection Europe, together with Team Ocelot partners automotive specialist Ricardo plc, Thales, QinetiQ, Formaplex, DSG and Sula, Ocelot is the most highly protected and agile vehicle of its size and weight that is available today.

Ocelot moved from concept to development over a remarkably short time frame for a military vehicle. Marrying together innovations from the motorsport arena with traditional defence vehicle development discipline, Ocelot underwent more than 12 months of rigorous blast and mobility testing before being chosen by the MoD.

David Hind, Managing Director, Force Protection Europe, said, "Our prime goal for this year is to meet the MoD's schedule for the LPPV programme. However Ocelot's success has also generated international interest in this ground breaking vehicle, which we hope to see being developed for other markets; the first of these is Australia as we prepare to send two Ocelots - a utility and a command variant - Down Under for testing in the Land 121 Phase 4 Project for the Protected Mobility Vehicle - Light prototype.

million (\$14 million) from the Swedish Defence Forces (FMV).

The order is part of the PROTECTOR Nordic program where Sweden and Norway in cooperation will procure the same RWS configuration for use throughout their platforms.

The Protector Weapon Control System protects military troops by allowing the vehicle's weapons to be operated from a protected position inside the vehicle.



## Defence Industry

### BAE Systems gets R900m MRAP upgrade deal



BAE Systems Land Systems South Africa has won a contract worth more than R900 million (US\$130 million) for survivability and mobility upgrades to its RG31 Mine Resistant Ambush Protected (MRAP) vehicles through its teaming agreement with General Dynamics Land Systems Canada (GDLS-C).

The upgrade kits will further enhance the survivability and mobility of the battle-proven RG31 vehicles, BAE Systems says in a statement. As part of the modernisation work in South Africa, a powerpack providing higher performance and new suspension components and transfer cases, which were designed and manufactured by BAE Systems, will be incorporated into the upgrade kits.

"We appreciate our ongoing relationship with GDLS-C as well as the confidence that the US military has in the RG31 vehicle. Readiness and sustainment is an important part of our business and through these programmes we continue to protect the lives of US soldiers," said BAE Systems, Land Systems South Africa Managing Director Johan Steyn.

The RG31 is a mature, combat proven mine protected armoured personnel carrier designed, developed and manufactured by BAE Systems in South Africa. In total, over 1600 RG31 vehicles have been delivered through GDLS-C under the MRAP programme, an additional 566 RG31s have been delivered to US forces under separate contracts.

The 4x4 RG31, with its a V-shaped hull, was introduced in the mid-1990s and is superficially similar to the SA Army's Mamba. It is certified to protect its crew from rifle and light machine gun fire, anti-tank land-mine detonations and improvised explosive devices. In its standard troop carrying configuration the Mk 5E variant can carry up to ten troops (a driver plus nine others), although it can be configured for many other

## Contracts

### KONGSBERG logs PROTECTOR Contract valued at 80 MNOK with Swedish Defence Forces

KONGSBERG has booked an order on PROTECTOR remote weapon stations (RWS) valued at NOK 80

roles.

## Exhibitions

### GCC and Jordan defence budget is expected to hit US\$68Bn (Dh249 billion) in 2011

Arab Nations Prepare for Front Line at IDEX and NAVDEX 2011. Strong exhibitor presence from the region shows Arab world's advancing capabilities in defence supply.

With more than 200 companies from Arab Nations confirmed to exhibit at this year's International Defence Exhibition (IDEX) and Naval Defence Exhibition (NAVDEX), the evolving nature of the region's defence industry which is moving from buyer to supplier, is being highlighted.

Representing Bahrain, Egypt, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia and the UAE, some of the companies exhibiting at this year's show include:

- In Aerospace: Griffon Aerospace, TLD Group, NP Aerospace and Hawker Pacific, offering aerospace vehicle manufacture, ground support, personal protection and aviation sales.
- In Land Defence: Jordan Light Vehicle Manufacturing exhibiting its range of light combat and transport vehicles. Headline sponsors of IDEX, Tawazun Holding, a government-owned company designed to diversify the national economy into a wide range of industrial and commercial ventures, and its related subsidiaries such as Caracal International, and Tawazun Advanced Defence Systems.
- In Naval Defence: Abu Dhabi Ship Building a world-class ship builder, specialising in the construction, repair, refit, and upgrade of naval, military and commercial vessels, Abu Dhabi Mar specialising in the building and refitting of yachts, Stellar Composites specialising in consumer and defence vessels, and Ocean Power International, suppliers of Thordon Bearings.

Commenting on the regional presence at this year's show, Mohamed Al Mashgouni, IDEX 2011 Show Director, said: "We are seeing an emerging role for Arab nations in the defence sector; while this region is still investing heavily on importing technologies, the manufacturing and supply capabilities in the region, have also ramped up in the last few years. In line with this, nearly 10 percent of our exhibitors at this edition are from the region - providing a strong backdrop for this year's show. Exhibitors from the Arab world, will therefore definitely, be among the ones to watch this year."

IDEX is being held under the patronage of His Highness Sheikh Khalifa Bin Zayed Al Nahyan, President of the UAE, from 20th – 24th February 2011. It is organised by ADNEC (Abu Dhabi National Exhibitions Company) in association with the UAE Armed Forces GHQ.

Although supply capabilities have increased, demand

for products by Arab Nations from domestic and international suppliers, is still predicted to be one of the highest globally. According to recent research by Frost & Sullivan, the GCC and Jordan defence budget is expected to hit US\$68Bn (Dh249 billion) in 2011, growing to around \$80 billion by 2015. Overall defence spending in the Middle East is also expected to cross US\$100Bn by 2015.

Strong economic growth, continuing regional security concerns and the desire to develop indigenous capabilities through the use of offset programmes are driving the demand and strong growth projections for the region in the run up to IDEX and NAVDEX 2011.

## Contracts

### BAE Systems to Modernize Bradley Vehicles through \$47 Million Contract



YORK, Pennsylvania -- BAE Systems recently received a \$47 million contract modification to enhance 95 of its most survivable vehicle – Bradley – by replacing old and damaged components with updated equipment and technology.

"As the mission and combat environments for our soldiers are changing, we are working to provide a modernized Bradley Fighting Vehicle that continues to perform at an optimal level, providing increased survivability and enhanced situational awareness components," said Joe McCarthy, vice president and general manager of the Heavy Brigade Combat Team Systems for BAE Systems.

Under this contract, the Bradley vehicles will be reset and converted from the Bradley Operation Desert Storm (ODS) model to the Bradley Operation Desert Storm Situational Awareness (ODS SA) configuration. The Bradley ODS SA vehicle features the latest digitized electronics for optimum situational awareness, network connectivity and communication within the Heavy Brigade Combat Team. The vehicle's proven durability and commonality of design reduces logistic burden, while enhancing battlefield performance to meet a variety of mission requirements in various combat situations.

The modernization process includes replacing obsolete equipment with updated components, restoring the vehicle to pre-combat condition. Work provided through this contract is supported by the company's robust readiness and sustainment business.



The award amount of \$47 million is the first tasking under a not-to-exceed total contract amount of \$94 million. Additional orders for the balance of the contract value may be awarded in the future. The contract was awarded by the U.S. Army TACOM Life Cycle Management.

Work will be performed by the company's existing workforce at its facilities in Fayette and York, Pennsylvania, as well as the Red River Army Depot in Texarkana, Texas. Vehicle deliveries will begin in March 2012 and will end in June 2012.

Bradley Fighting Vehicles continue to provide outstanding survivability, mobility and lethality to U.S. soldiers in various combat situations. The Bradley fulfills five critical mission roles - infantry fighting vehicle, cavalry fighting vehicle, fire support vehicle, command vehicle and engineer squad vehicle – for the U.S. Army's Heavy Brigade Combat Team.

BAE Systems designs, manufactures and supports Bradley Fighting Vehicles through its U.S. Combat Systems business. U.S. Combat Systems is a modern, efficient, full-spectrum developer, integrator and supplier of survivable, lethal ground and naval combat platforms. U.S. Combat Systems is also a main supplier of the U.S. Army's Heavy Brigade Combat Team, an integral developer of mine protected and future combat vehicles and top producer of naval guns and missile launchers.

## Robots

### DARPA issues Experimental Crowd-derived Combat-support Vehicle (XC2V) Design Challenge

Today's warfighters are called upon to operate at peak efficiency in virtually every terrain and under myriad harsh environmental conditions.

Would their ability to face rapidly changing mission demands improve by introducing a dynamic method of manufacturing military vehicles that streamlines the design/build process, introduces the latest in innovation, and keeps pace with the needs of the warfighter?

From concept to construction current military vehicle manufacturing processes take several years. By leveraging the power of the crowd, we can contribute to reducing that timeline significantly. Additionally, this opens the aperture to introduce greater ideas and design compilation with a reduction in time and the potential for a better performing vehicle. This more efficient process could save lives and improve mission success.

The Defense Advanced Research Projects Agency (DARPA) seeks to engage the crowd for its latest challenge. The Experimental Crowd-derived Combat-support Vehicle (XC2V) Design Challenge, facilitated by Local Motors, Inc. asks individuals to conceptualize a vehicle body design for two different missions—Combat Reconnaissance and Combat Delivery & Evacuation.

This is an opportunity for servicemembers, race and auto enthusiasts, and those with an interest and talent in

engineering, materials, industrial design, etc., to support the warfighter by contributing to the future of military vehicle manufacturing, win up to \$10,000, and see their design become a reality in the form of a fully functioning concept vehicle.

This competition provides experts, novices and the curious the opportunity to provide input to the final design of the vehicle. Whether you provide a design or just vote on the best submission, you can contribute.

The challenge begins today, and final submissions are due March 3, 2011.

## Robots

### TiaLinx Launches Mini-Robot with a Long Standoff Capability to Detect Motion and Breathing Inside a Compound



NEWPORT BEACH, Calif. -- TiaLinx, Inc., a developer of a remotely controlled mini-robot integrated with mm-wave miniaturized radars, today announced the launch of the Cougar20-H. The mini-robot system is capable of performing dual functions as motion detection as well as probing for the breathing of a person in a compound that is remotely controlled at long standoff distances.

The lightweight and agile mini-robot with tractable arm has been integrated with TiaLinx's fine beam ultra-wideband (UWB), multi-Gigahertz radio frequency (RF) sensor array. The system provides long standoff surveillance of a premise to track movement as well as to detect motionless live objects. TiaLinx's real-time UWB RF Imaging development was sponsored by an SBIR Phase II from the Army's PEO AMMO, PM-CCS.

Through a software-controlled interface which is integrated into a laptop, Cougar20-H can be remotely guided from long distances to perform mission-critical tasks. Integrated multiple cameras allow day and night visibility of a premise under surveillance for enhanced situational awareness. Capability to probe the compound at standoff keeps the Cougar20-H out of harm's way.

The RF Scanner is mounted on a lightweight arm and transmits wideband signals that are highly directional and can penetrate reinforced concrete wall at an extended range. In the receiver, a signal detector circuit is employed to capture the reflections from targets. Amplitude and delay information are then processed in an integrated signal processor.

"Cougar20-H has the capability to sense-through-the-wall (STTW) at farther distances than Cougar10-L that was launched last month. Cougar20-H

can also be remotely programmed at multiple way points to scan the desired premise in a multi-story building and provide its layout. In contrast only Cougar10-L is capable of scanning a premise horizontally for unexploded ordnance (UXO) as well as vertically to STTW," commented Dr. Fred Mohamadi, Founder and CEO of TiaLinx. "TiaLinx is constantly upscaling its UWB RF Imaging core competence to enable standoff sensing of a premise for enhanced situational awareness."



## Contracts

### BAE Systems selects Sagem's Sigma 30 inertial reference unit for Archer artillery systems



Paris -- Sagem (Safran group) has won a BAE Systems contract, against an international field of competitors, to provide Sigma 30 pointing and navigation units for 48 new FH77 L52 Archer artillery systems to be deployed by the Norwegian and Swedish armies. Service entry is slated for late 2011 with the Nordic Battalion.

Based on digital laser digital gyro technology, Sagem's Sigma 30 is the basis of a very-high-performance land navigation and artillery pointing system, designed to operate even under the most demanding conditions.

The Sigma 30 inertial units will be mounted directly on the 155 mm barrel. Because of their precision measurements, these units further enhance the high-level automation of the Archer artillery system, which is designed to lay down very accurate fire on short notice and at a high rate. Integrated in the artillery command and coordination systems, Sigma 30 will also enable Archer a wide range of firing options, in particular simultaneous strikes against a single target.

Sagem's Sigma 30 inertial reference unit equips some of today's leading artillery systems, including Caesar 155 mm truck-mounted howitzer, MLRS multiple launch rocket systems deployed by NATO countries, and the 2R2M 120 mm mobile mortar.

Sagem's artillery solutions, already deployed by armies in more than 20 countries, cover all designation and pointing requirements, including forward observation systems, networked optronic sensors, navigation and pointing systems, fire control, computers and digital mapping.



## Defence Industry

### Rheinmetall takes up a majority share in ADS GmbH



Steadily expanding its role as a global supplier of systems and equipment for ground forces, the Rheinmetall Group of Düsseldorf has taken over operational control of ADS Gesellschaft für aktive Schutzsysteme mbH of Lohmar, Germany.

Simultaneously, ADS GmbH has reported a breakthrough in marketing its revolutionary new high-tech system for protecting military vehicles.

Rheinmetall's stake in ADS increases to 74% from 25%. The remaining share of the company continues to be held by IBD Deisenroth of Lohmar. In taking over a controlling interest in ADS, Rheinmetall is exercising an option agreed when the Group first invested in the company in 2007.

In the meantime, ADS Gesellschaft für aktive Schutzsysteme mbH has successfully completed development of its "Active Defence System", one of the most innovative forms of military protection anywhere, and now been awarded a first serial production order.

An Asian nation has decided to protect its military vehicles in future with the "Active Defence System". ADS can now move from the development and trials phase to full-scale serial production, which is to commence in 2011. A number of European armies, too, are currently showing a keen interest in this new technology.

The ADS belongs to a new generation of standoff active protection technologies. It is one of the world's most advanced and effective systems for protecting military vehicles of practically every weight class from operational threats, especially light antitank weapons, guided missiles and certain improvised explosive devices (IEDs).

Experts put the number of tactical vehicles worldwide that need to be retrofitted with such active protection systems in the tens of thousands.

The system is based on the hard-kill principle, in which incoming projectiles are detected and instantly – i.e. within microseconds – destroyed by directed energy immediately before reaching their target. It is the only high-performance close-in defence system which minimizes collateral damage in the vicinity of the vehicle.

Achieving a level of force protection commensurate to the current threat means having to equip platforms with a combination of active and passive protection solutions coupled with soft-kill systems.

Well aware of this, Rheinmetall has been systematically expanding its technological portfolio, partly by acquiring new companies. Ownership of Rheinmetall Chempro GmbH, Rheinmetall Verseidag Ballistic Protection GmbH and a now-expanded stake in the company ADS Gesellschaft für aktive Schutzsysteme mbH gives the Group ready access to a unique array of sophisticated protection technologies.

Rheinmetall's comprehensive protection concept is based on a multi-level approach. Effectively constituting a vehicle's outermost layer of defence, the "Active Defence System" is an extremely innovative, highly effective solution that neutralizes ballistic threats before they reach their intended target.

Passive solutions such as add-on armour made of composite or ceramic materials form an indispensable second line of defence. Rheinmetall is pressing ahead with new developments here, too, offering military customers comprehensive protection solutions from a single source, e.g. bullet-resistant driver's cabs for logistics vehicles and trucks.

The Group's protection concept also encompasses high-performance soft-kill solutions for ground vehicles as well as fixed wing aircraft, helicopters and ships. For example, Rheinmetall's "Rosy" smoke/obscurant protection system renders ground vehicles invisible in the event of an attack, while its MASS naval countermeasures now sets the standard worldwide. MASS works by launching decoys which reliably divert incoming enemy missiles from their intended target.



### Contracts

#### Jenoptik awarded partial contract for the new PUMA infantry fighting vehicle worth almost 40 million euros



MTU submits order for the supply of starter generators. Jenoptik's total share in the new infantry fighting vehicle for the German Army will be approx. 70 million euros.

The new fiscal year for Jenoptik's Defense & Civil Systems division is starting with a major order. In February Jenoptik was awarded the contract by its longstanding development and project partner MTU Friedrichshafen GmbH to supply a total of 405 starter generators as well as other key electrical subsystems for the PUMA. Delivery will commence during the course of this year and continue up to 2020.

With this big partial order Jenoptik received slightly more than half of the expected volume of the PUMA

order which amounts in total to approx. 70 million euros. Jenoptik expects the remaining approx. 30 million euros to be awarded in the current year. The amount of 70 million euros does not include service and maintenance for the entire service life of the PUMA infantry fighting vehicle. These will be awarded and invoiced separately, in addition to the supply of subsystems.

#### Preparations for mass production have been completed.

"We are ideally equipped for this on the production side, the preparations for mass production have been completed and the test facilities installed," said Jenoptik Chairman Michael Mertin. The first two PUMAs were handed over to the German Army in December 2010 via PSM GmbH, Kassel, the general contractor for the whole project. PSM is a project company set up by Krauss-Maffei-Wegmann and Rheinmetall. In July 2009 the Federal Office of Defense Technology and Procurement ordered a total of 405 of the new vehicles for the German Army. The German Army's most important modernization project is valued at a total of approx. 3.1 billion euros.

Jenoptik's Defense & Civil Systems division is contributing systems and components, from energy supply to turret weapon stabilization, in close cooperation with the project partners.

MTU is one of Jenoptik's longstanding customers in the area of defense and security technology.

In Germany Jenoptik is one of the key suppliers of subsystems and components for the defense industry. The Defense & Civil Systems division focuses on the areas of vehicle and aircraft equipment, drive and stabilization technology, optoelectronic instruments and systems for the defense and security industry, software, measurement and control technology plus a comprehensive range of services. In the area of military land vehicles the Jenoptik Group has a long successful track record in the supply of part systems and components for vehicle platforms of leading systems suppliers. Examples of this are the Leopard II battle tank, the PzH 2000 self-propelled howitzer 2000 or the Boxer.



### Defence Industry

#### Swedish Akers Krutbruk big winner on the Finnish Patria deal



The Swedish defence solutions company Akers Krutbruk, producing advanced protection for military vehicles, has won a record order from Patria Land Systems, which is a part of the defence,



security and aerospace group Patria.

Sweden's defence procurement agency FMV awarded Patria the contract to deliver 113 wheeled Armoured Modular Vehicles (AMV 8x8) to the Swedish Armed Forces. Patria and Ekers Krutbruk have now signed a contract regarding the delivery of a complete protection solution for the vehicles. The contract is significant and the biggest ever for Ekers Krutbruk.

Ekers Krutbruk is part of the IBD-group and is specialized in research, development, testing and production of advanced protection for military vehicles. The company will produce a complete protection package for 113 AMV defence vehicles - a modern wheeled armoured personnel carrier with high level of protection, mobility and accessibility. For Ekers Krutbruk the deal will include the whole range from testing to integration and production of the protection solutions.

- This is our biggest contract ever. In the short term the order will create 20 to 25 new jobs since we will need both engineers and production staff. It will also be an important deal for the entire community of Strångnäs in a long period of time since we will involve local suppliers, says Niclas Sahlgren, CEO, Ekers Krutbruk.

The vehicles will begin to be delivered in 2012 and will be in operational service in 2014. Swedish Armed Forces has an option to order 113 supplementary vehicles.



## Contracts

### iRobot Announces International PackBot Orders

BEDFORD, Mass. -- iRobot Corp., a leader in delivering robotic technology-based solutions, today announced it has received international orders totaling \$4.4 million in the first quarter of 2011 for the delivery of 27 iRobot 510 PackBot tactical mobile robots and spare parts.

The iRobot 510 PackBot performs bomb disposal, reconnaissance and other dangerous missions for warfighters and first responders.

"Our allies recognize the life-saving benefits provided by our robots," said Robert Moses, president of iRobot's Government and Industrial Robots division. "The emerging international market provides an important growth opportunity for iRobot, and one in which we invested heavily in 2010. We think that over time, sales of the iRobot PackBot and Small Unmanned Ground Vehicle (SUGV) into this market could total 15 to 20 percent of our government and industrial product revenue."

In 2010, iRobot's Government and Industrial Robots division received international orders totaling \$13.2 million. The company has delivered its government and industrial line of robots to more than 25 countries, seven of which were new customers last year.



## Exhibitions

### New Armoured Vehicle Technology from Africa to Shake Up the Market



European defence manufacturers are facing strong competition in the form of new ground breaking vehicle technology developed in Africa.

Paramount Group, Africa's largest privately owned defence company, is at the forefront of this trend and is showcasing its latest vehicles at International Armoured Vehicles 2011, to be held at the Excel Centre in London from 7-10th February (at stand 931).

The African defence giant, which is at IAV at the request of its customers, is showcasing its range of 'new breed' infantry fighting vehicles following the successful launch of its latest vehicle, Mbombe, in Johannesburg in late 2010. Since then Paramount Group has experienced healthy levels of interest in the vehicle from armed forces across the world.

Mbombe is a revolutionary six wheeled infantry fighting vehicle that is ideally suited to cope with conventional and non-conventional threats.

Commentators have branded Mbombe the 'holy grail' of modern vehicle design because of its flat hull - as opposed to the traditional V shape - giving it a reduced target profile, yet still boasting better armour than many vehicles used by NATO forces in Afghanistan.

Ivor Ichikowitz, Executive Chairman of the Paramount Group, said: "Europe is waking up to the fact that African manufacturers, scientists and engineers are producing world class products for the global defence sector. European defence experts and buyers are very excited by Mbombe. Many believe that this is the IFV that forces from across the world have been waiting for because it is versatile enough to handle a number of different roles."

Ichikowitz continued: "South Africa's defence industry has an established record at the cutting edge of mine protected vehicle design and development. Now Paramount Group is using its advanced research and development, harnessing the latest technology, to take that innovation to the next level and deliver a new breed of armoured vehicle to the global market.

"We are attending IAV 2011 to show the European market that Africa has a long tradition of armoured vehicle design, the skills and expertise to provide the very best in armoured vehicle technology, offering superb protection, reliability and affordability."

David McDonald Joyce, Paramount Group's Business Development Director, will reveal more about the

Group's development of the next generation of mine protected vehicles on day one of IAV 2011's Conference.

In a presentation entitled 'Armoured Vehicle Capabilities - An African Perspective' starting at 16.30 on Tuesday 8th February, he will discuss how lessons and experience from modern conflicts around the world are shaping the future of vehicle development.

David McDonald Joyce said: "We are at IAV at the request of our customers and in response to a growing level of interest from forces across the world. The reality is that modern forces require versatile and adaptable vehicles that can handle both traditional operations as well as newer threats, such as counter insurgency. Our vehicles meet these challenges which is why I think we are experiencing increased interest from buyers."



**Defence Industry**

**Minister for International Security Strategy dispatches two Ocelots for trials Down Under**



UK Minister for International Security Strategy, Gerald Howarth, visits Ricardo  
Gerald Howarth MP, UK Minister for International Security Strategy, today had the first viewing of the utility and command variants of Force Protection Europe's Ocelot, as they were being prepared for transportation to Australia.

During a visit to the Ricardo engineering facility in Shoreham, where the two variants have been manufactured, the Minister was given a full briefing on both vehicles' capabilities. Every Ocelot has a v-shaped spine running the length of the vehicle, which protects the occupants and also its critical components from mine and blast threats. On top of the v-spine is an integrated pod which can be configured for a variety of mission roles such as the utility and command variants (required for the Land 121 programme); protected patrol variant (UK's Foxhound LPPV); and the special weapons variant (PV funded by FPE).

UK Minister for International Security Strategy, Gerald Howarth, visits Ricardo Force Protection Europe's contract winning light protected patrol vehicle, Ocelot, is also appearing at this year's International Armoured Vehicles exhibition which takes place on 8 - 9 February at ExCeL in London. This will be the first time that the protected patrol vehicle variant has been on public view since Force Protection Europe was awarded a contract last November to supply the UK MoD with 200 of the vehicles.

Ocelot has been hailed as the most highly protected and agile vehicle of its size and weight available on today's market. The brainchild of survivability specialist

Force Protection Europe and automotive specialist Ricardo plc, the vehicle is being built in Ricardo's manufacturing facility.

UK Minister for International Security Strategy, Gerald Howarth, visits Ricardo. The Minister said: "The Ocelot is a testament to British design and engineering skills. It has already been selected by the UK Government for our Light Protected Patrol Vehicle programme as it offers unparalleled levels of protection for a vehicle of its size and weight, with exceptional performance both on and off road. I believe the Ocelot has the qualities which other Armies require to meet today's operational challenges, and I wish the team every success in exporting this excellent vehicle."

David Hind, Managing Director of Force Protection Europe, said: "Today's Ocelot is clearly demonstrating its outstanding versatility with the unveiling of two new pod variants designed for very different roles. One of the most attractive aspects of the vehicle, on top of its survivability levels which protect the crew and mission systems, is its unique modular construction which means that pods can easily be changed in theatre to suit the requirements of each mission. I am delighted that we are able to share this outstanding achievement with Ricardo plc, where we have also chosen to place the manufacturing of the Foxhound."

Martin Fausset, Managing Director of Ricardo UK, added: "I am pleased to welcome Gerald Howarth to Ricardo to preview the two Ocelots shortly to be exported for the Australian Land 121 programme and to meet the teams responsible for the design and development of this highly advanced vehicle concept which offers unparalleled standards of performance, adaptability and crew protection. 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."



**Defence Industry**

**Norwegian Armed Forces Adopt FN MINIMI Machine Gun**



Herstal, Belgium -- Belgium-based FN Herstal is pleased to announce that the FN MINIMI(tm) 5.56 has been selected as the new light machine gun for the Norwegian Armed Forces.



The Norwegian Defence Logistics Organisation (NDLO) confirmed their decision last November, putting an end to a yearlong competition.

The contract includes the manufacture and delivery of 1,900 MINIMI(tm) 5.56 machine guns together with spare parts and accessories up to the end of 2012. The contract also includes optional quantities and additional services to be provided by FN Herstal to the NDLO over a 15-year period.

The MINIMI(tm) 5.56 light machine gun is the newest addition in line with the FN MAG(tm) medium machine gun and the FN M2HB-QCB heavy machine gun already in use by the Norwegian army.

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## Defence Industry

### Norway Buys Rubber Tracks for CV90 Afghan Operations



Ornskoldsvik, Sweden -- Two Norwegian Army CV9030 infantry fighting vehicles have been using rubber tracks in northern Afghanistan since December.

The 28-tonne BAE Systems vehicles are the heaviest to have used them on operations.

The rubber track system is jointly developed by Soucy International in Quebec, Canada and BAE Systems in Sweden: Soucy has designed and produced the tracks and BAE Systems has qualified the system in full-scale trials. The tracks reduce vehicle weight by more than one tonne compared with conventional steel tracks. They also cut noise by a massive 10dB and vibration levels by 65 percent.

“The reduced vibration levels are increasing the life expectancy of electronics, optronics and ammunition, which will significantly reduce vehicle running costs,” said CV90 platform manager Dan Lindell. “The tracks also improve stealth, reduce crew fatigue and increase mobility in many conditions, such as on snow and ice.”

Major Per Rune Hansen is CV90 fleet manager for the Norwegian Defence Logistics Organisation. He commented: “Our vehicle crews were a little sceptical of the rubber tracks at first, but once they used them, they became big fans and really appreciate the reduced vibration and quieter operation.”

Noise and vibration from steel tracks are coming under increasing scrutiny because of ever-tightening health and safety legislation across the world.

“Health and Safety is another reason we are pushing the limits of rubber track technology” says Lindell. “There have been reservations about their robustness on

heavier vehicles, but rubber track performance and track life is increasing all the time, which is why Norway has bought the tracks.”

BAE Systems technical and durability tests on a CV90 over several years weighing 28,000 kg gave good results, with a track life comparable with conventional steel tracks. Trials by the Norwegian Army in late 2010 were so positive that the two vehicles were sent to Afghanistan before the planned schedule was completed.

CV90 trials at 35 tonnes will take place through 2011. The increasing vehicle weights possible with rubber tracks are the result of advances in rubber track technology and vehicle configuration. Also planned for early 2011 are mine blast trials to assess the effect of blast and fragments on the tracks.

Dan Lindell concluded: “BAE Systems and Soucy have a product which gives significant advantages and which can be transferred to other vehicle fleets. We are continuing to invest in CV90 to keep it at the forefront of its class.”

BAE Systems already works with Soucy on rubber tracks for several of its lighter-weight armoured vehicles, including the go-anywhere BvS10 and the M113 armoured personnel carrier which Norway has deployed with rubber tracks in Afghanistan. The joint development with Soucy on rubber tracks for CV90 began as part of BAE Systems’ bid for the Canadian Close Combat Vehicle programme.

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## Contracts

### US Army increases scope of KONGSBERG CROWS II framework agreement

KONGSBERG has signed a contract with the US Army increasing the number of Common Remotely Operated Weapon Stations (CROWS) in the existing CROWS II framework agreement from 10,349 to 11,690 systems.

The total value of the increase will be agreed upon later this year. Total value of the increase will depend on the US Army's future demand and annual allocations. KONGSBERG has received a purchase order for CROWS II systems valued at NOK 345 million [\$59.17 million; €43.44 million - Ed.] as part of the increased scope of the framework agreement.

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.

The initial CROWS II framework agreement was disclosed on 22 August 2007.

The Protector Weapon Control System protects military troops by allowing the vehicle's weapons to be operated from a protected position inside the vehicle.

## Future Technologies

### Nanotechnology could pave the way for hydrogen fuels

EADS Innovation Works, the Group's corporate research arm, is working with university researchers to find a new solid state storage system for hydrogen. This technology would make it possible to use hydrogen as a clean alternative to traditional hydrocarbon-based fuels in aeroplane and car engines.

Hydrogen is a clean fuel which produces only water on combustion or when combined with oxygen in a fuel cell to produce electrical power. However, it can be expensive and difficult to store safely. In addition, to store hydrogen as a gas demands high volumes, while to store as a liquid increases weight and the energy requirement (to compress it).

Storage of hydrogen in a solid is, therefore, very attractive but minimising weight and volume of the store is challenging and the rate of transfer from the tank to a fuel cell or engine is often slow. These barriers are currently holding back the use of hydrogen on an industrial scale in fuel cells to provide power for aeroplanes and road vehicles.

Chemists at the University of Glasgow are working with EADS by using nanotechnology to alter the design and material composition of a storage tank with the aim of making it so efficient that it will be feasible to use solid state hydrogen on an industrial scale for aeroplanes and cars.

If the developments to the tank structure are successful, EADS is planning to fly an un-manned hydrogen-powered test plane in 2014 with a longer term view of introducing commercial aeroplanes powered by hydrogen.

"Replacing traditional hydrocarbon-based fuels with pollution-free hydrogen in aeroplane and car engines would deliver huge benefits to the environment because carbon emissions would be dramatically reduced" said Dr.-Ing. Agata Godula-Jopek, Fuel Cells Expert in the EADS Power Generation Team, which is coordinating the programme for the company.

Duncan Gregory, Professor of Inorganic Materials at the School of Chemistry at the University of Glasgow, is leading the research. He is using nanotechnology to alter the structure of the Hydrisafe Tank, which is a new design under development by Hydrogen Horizons, a Scottish-registered start-up company.

The University and EADS IW have secured funding from the Materials Knowledge Transfer Network - part of the UK Technology Strategy Board - and the Engineering and Physical Sciences Research Council (EPSRC). This will allow a student to carry out a four year PhD project, spending time at the University and the company's German offices in Ottobrunn.

The research will involve testing the Hydrisafe tank with alternative hydrogen storage materials. The tank currently uses the established and commercially available lanthanum nickel (LaNi<sub>5</sub>) storage alloy. The research will look into replacing LaNi<sub>5</sub> with other hydride

materials such as magnesium hydride (MgH<sub>2</sub>), which has been modified at the nanoscale to allow it to receive and release the hydrogen at an even faster rate.

Modifying the construction of the tank will extend its longevity, making it suitable to have a solid state hydrogen storage system that can feed a fuel cell at the required energy densities required on an aeroplane.

Professor Gregory said: "Using new active nanomaterials in combination with novel storage tank design principles presents a hugely exciting opportunity to address the considerable challenges of introducing hydrogen as a fuel for aviation. This collaboration between engineers and chemists and between industry and academia provides the pathway to achieve this"

EADS IW and Prof Gregory's team are seeking funding from the European Union to build a European-wide team of academic and industrial partners to examine the wider issues relating to using hydrogen on an industrial scale to power aeroplane and car engines.

There is a recognition that while there is a strong potential for the adoption of fuel cells into the portable fuel cells market, key barriers to delivering this are the safe, efficient and cost-effective storage of hydrogen. The research project, if approved, would explore how best to deliver a practical solid state hydrogen solution for portable and micro fuel cell systems.

EADS is a global leader in aerospace, defence and related services. In 2009, the Group - comprising Airbus, Astrium, Eurocopter and Cassidian - generated revenues of € 42.8 billion and employed a workforce of more than 119,000.



## Defence Industry

### Oshkosh Defense to Deliver Additional M-ATV Protection Kits

OSHKOSH, Wis. -- Oshkosh Defense, a division of Oshkosh Corporation, will deliver more than 2,000 MRAP All-Terrain Vehicle (M-ATV) underbody improvement kits following an order from the U.S. Army TACOM Life Cycle Management Command.

"The Oshkosh M-ATV's modular design allows for easy integration of these add-on protection kits and is part of our commitment to providing the military with the utmost protection," said Charlie Szews, Oshkosh Corporation president and chief executive officer. "The protection kits enhance the vehicles' MRAP-level survivability on the battlefield and help shield troops from IEDs and other threats."

The M-ATV family of vehicles is built with factory-installed armor, and is also able to accept add-on armor and protection kits. The vehicle can incorporate protection kits while maintaining its full payload capacity of 4,000 pounds and a 70 percent off-road profile capability, thanks to the use of the Oshkosh TAK-4(R) independent suspension system.

The award has a ceiling price of nearly \$102 million. Deliveries under this order are expected to finish by

September 2011. Oshkosh Defense has received awards to date for nearly 8,400 M-ATVs, as well as spare parts kits, upgrade kits and aftermarket support.

armed forces and NGO organisations.

For a vehicle in the 7.5 ton class the SPV400 has the blast and ballistic protection levels typical of vehicles over twice its weight, yet has agility, speed and outstanding cross country performance. It can reach speeds up to 80mph on the desert plain but can manoeuvre in tight urban environments, inaccessible to heavier vehicles. Air suspension ensures a smooth ride over extreme terrain and conventional steering reduces complexity.

High mobility military vehicle specialist, Supacat, has developed the SPV400 using a modular and future-proofed design, which can be upgraded to meet evolving threats and requirements. It can be configured to perform a variety of roles, such as logistic, reconnaissance or ambulance, with the crew pod easily replaced with a new mission module.

Purpose designed to counter the Improvised Explosive Device threat, the SPV400 boasts an integrated blast and ballistic protection system. The system was designed by the composite armour protection specialist, NP Aerospace, using materials offering high levels of protection from a range of threats at a much lower weight than a traditional steel design. The crew pod is constructed as a separate module, sealed off from potential secondary projectiles, such as kit and electronic devices, which are housed in a rear compartment. All seats are mine blast protected.

“The SPV400 is a clean sheet design which has crew survivability built in from the outset to provide the protection and mobility necessary to meet the threat from Improvised Explosive Devices”, said Nick Ames, Managing Director, Supacat.

Additional protection is provided by the front and rear axles, which are mounted on detachable ‘sacrificial’ sub-frames to absorb and deflect a blast away from the crew pod if a wheel strikes an explosive device. To enable this approach, the engine and transmission are separated to ensure the crew pod is not impacted should the front sub-frame detach. This modular approach also enables rapid in-theatre repair should a vehicle be involved in an incident. The affected module(s) can be quickly replaced enhancing the availability and maintainability of deployed platforms.

The SPV400 will be displayed on the UKTI stand at IDEX outfitted with integrated mission systems provided by SELEX Galileo to demonstrate its mission systems integration expertise. The systems include the SELEX Galileo driver’s night vision system and local situational awareness system, both of which outfit existing UK Army vehicles. These link with SELEX Communications internal comms and ECM systems and an EOS Raven remote weapons station into a seamless mission package.

## Contracts

### Increased scope of CROWS II framework agreement



KONGSBERG has signed a contract with the US Army increasing the number of Common Remotely Operated Weapon Stations (CROWS) in the existing CROWS II framework agreement from 10,349 to 11,690 systems.

The total value of the increase will be agreed upon later this year. Total value of the increase will depend on the US Army's future demand and annual allocations. KONGSBERG has received a purchase order for CROWS II systems valued at 345 MNOK (\$120,404,771) as part of the increased scope of the framework agreement.

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.

The initial CROWS II framework agreement was disclosed on 22 August 2007.

The Protector Weapon Control System protects military troops by allowing the vehicle's weapons to be operated from a protected position inside the vehicle.

## Exhibitions

### Supacat highlights SPV400 versatility, protection and mobility for Middle East debut at IDEX 11



The new Supacat SPV400 protected light vehicle is being shown for the first time in the Middle East on 20 February at IDEX 2011, Abu Dhabi, where its versatility and groundbreaking levels of protection and mobility will be highlighted to the region’s



## Defence Industry

### Oshkosh Defense Unveils TAPV Prototype and Plans for Canadian Operations to Support Military Vehicle Programs



OSHKOSH, Wis. & LONDON, Ontario -- Oshkosh Defense, a division of Oshkosh Corporation, today unveiled its prototype for Canada's Tactical Armoured Patrol Vehicle (TAPV) program, as well as the company's plans to work with its subsidiary, London Machinery, Inc. (LMI), to leverage that company's new facility in London, Ontario, in pursuit of Canadian Department of National Defence (DND) vehicle programs.

LMI, the leading manufacturer of concrete mixer trucks in London, Ontario, provides local advanced manufacturing capabilities and a highly skilled workforce to the Oshkosh Defense and General Dynamics Land Systems-Canada team's bids for the TAPV and Medium Support Vehicle System (MSVS) programs.

"Our team has thoughtfully reviewed draft RFPs for the TAPV and MSVS programs, and we are aligning our operations to DND requirements for highly-protected vehicles and long-term maintenance and support for the vehicles," said Andy Hove, Oshkosh Corporation executive vice president and president, Oshkosh Defense. "Our plans will deliver significant value to DND by leveraging proven technology and support capabilities while providing industrial and regional benefits to contribute to the Canadian economy."

LMI, an Oshkosh Corporation subsidiary, is set to provide in-country manufacturing capabilities for both the TAPV and MSVS programs. The 140,000 square-foot LMI facility applies the latest manufacturing methods and quality processes to produce concrete mixer trucks for customers throughout North and South America. The LMI operation was designed with capacity for future programs and fosters an experienced workforce to support the TAPV and MSVS programs as well as a broad range of commercial and specialty vehicle programs.

"The Canadian content provided by LMI is in addition to the team's commitment to perform the complete range of extensive systems integration and testing support for the vehicles at our company's London, Ontario facility," said Mark Roualet, president, General Dynamics Land Systems. "General Dynamics Land Systems-Canada also will provide in-country sustainment support."

Oshkosh Defense and General Dynamics Land Systems-Canada teamed for the TAPV program, which

will replace the Armoured Patrol Vehicle (APV) and the Coyote reconnaissance vehicle. The companies also are teamed up for the MSVS program, which will replace the Medium Logistics Vehicles, Wheeled (MLVW) fleet. The new programs will enhance the capabilities of the Canadian Forces with protected, high-performance vehicle fleets.

Oshkosh will serve as the prime contractor for both programs and will leverage proven vehicle platforms and advanced technologies for proposal submissions, including the MRAP All-Terrain Vehicle (M-ATV) and the Medium Tactical Vehicle Replacement (MTVR). Oshkosh Defense uses the services of Valley Associates to provide Canadian-based marketing and business development.

"From the start of our collaboration, the Oshkosh-General Dynamics Land Systems-Canada team has been dedicated to creating good jobs and lasting value to the Canadian economy," Hove said. "We are continuing to demonstrate that dedication through investment commitments in London Machinery."

The production work provided by LMI is in addition to the previously announced work scope being performed by General Dynamics Land Systems-Canada. On March 22, 2010, the team announced that General Dynamics will provide remote weapons system (RWS), command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR) integration and testing support for the vehicle as well as extensive logistics, training and technical manuals.



## Contracts

### MTL Group awarded V Hull contract for Foxhound Vehicle



MTL Group a major European Defence manufacturing specialist has been awarded a significant contract from Force Protection Europe to supply a serial production run of fabricated armoured "V" hulls for the prestigious UK Foxhound project.

MTL Group has also supported Force Protection Europe and Ricardo on this project through its Design For Manufacture service. This DFM service provided an opportunity to select the optimum materials and influence the design for volume production.

From their new 300,000 sq. ft modern manufacturing facility, MTL Group will produce these complex highly protected hulls. MTL Group will be using state of the art equipment including the world's largest robot press and robot welding to ensure consistent quality and volume achievement.

MTL Group is renowned within the Defence and Security sector as a reliable partner for components manufactured from both armour and high strength materials, and is recognised as the number one supplier within Europe for this type of service and materials.

MTL Group's Sales Director Karl Stewart said "We are delighted to be involved in the Foxhound programme and Design For Manufacture has been a key service that enabled us to work with our customer to enhance their product and reduce costs".

## Defence Industry

### KONGSBERG `s design chosen for next phase of the US CROWS program

US Army has released new and important information related to the future CROWS program procurement. This announcement refers to a future request for proposal for the next phase of the CROWS Program for the US Army.

"The information from US Army is a confirmation of the leading quality and performance position of the KONGSBERG CROWS system. I view this announcement as very encouraging for us in the upcoming competition for the next phase of the CROWS Program", says Walter Qvam, President and CEO.

The US acquisition laws require competition to ensure the US Government the best business, contracting and technical solutions. KONGSBERG has delivered over 10,000 remote weapon stations to date and is the supplier for the US Army's current CROWS program. Given this production experience and capacity as well as in-depth knowledge of the CROWS design, and a proven ability to adapt to volume fluctuations places KONGSBERG in a strong competitive position for the future US Army competition.

KONGSBERG is an international, knowledge-based group that supplies high-technology systems and solutions to customers engaged in the oil and gas industry, the merchant marine industry, and the defence and aerospace industries.

In 2010, KONGSBERG had a turnover of NOK 15.5 billion, and the Group had 5 681 employees in more than 25 countries.

## Army

### Army Armors More Heavy Tactical Trucks



Arlington, Va. -- The Army has introduced modular, add-on armor capability to key portions of its fleet of heavy tactical trucks to include the new M915-A5 Line-Haul Tractor, Palletized Load System PLS-A1, and Heavy Equipment Transporter HET-A1, service officials said.

"These vehicles are designed so you can take armor off during peacetime to reduce the burden on the platform itself -- as well as drive down the peacetime operating costs," said Col. David Bassett, project manager for Tactical Vehicles.

The move toward scalable armor for medium and heavy tactical vehicles is part of the Army's Long Term Armor Strategy articulated in its recently released 2011 Tactical Wheeled Vehicle Strategy - a document which lays out the Army's plans for its 290,000 vehicle-strong tactical fleet through 2025.

"The truck fleet that the Army has and is continuing to field today is really different than the one we went into these conflicts with. We've gone from having what was almost a completely un-armored fleet to one in which every vehicle that is used operationally overseas today is armored against the threats that face our Soldiers. We've



rapidly modernized our fleet," said Bassett.

These new armored trucks represent the most recent addition to a large TWV fleet of trucks already equipped with modular armor, including the new Family of Medium Tactical Vehicles and the Heavy Expanded Mobility Tactical Trucks, know at HEMTTs.

The modular armor approach - explained as an A-kit plus B-kit solution - allows a truck with a small amount of built-on integrated armor to accept additional add-on armor when dictated by the threat environment.

"In accordance with our Army modernization strategy, we are going to procure trucks that are adaptable so that they can be used in many different environments. They will have the ability to accept armor and then relinquish that armor when it is no longer needed," said Maj. Gen. Tom Spoehr, director of force development, Army G-8.

The modular armor strategy is designed to allow for the rapid incorporation of newer, potentially lighter-weight armor composites as technology progresses and makes them available, Spoehr said.

"They will be able to accept new forms of armor as science and industry produce new materials," he said. "These vehicles will have growth potential."



### Exhibitions

#### SOE KMDB participates in IDEX 2011



The State-Owned Enterprise Kharkiv Morozov Machine Building Design Bureau (SOE KMDB) will participate in IDEX 2011 International Defence Exhibition, which will take place in Abu Dhabi in 20-24 February 2011.

The enterprise will exhibit two vehicles - the Oplot main battle tank and the BTR-4 armoured personnel carrier.

The Oplot main battle tank is a tracked fighting vehicle that features a high firepower, reliable protection and high mobility.

The tank is intended to destroy all types of ground (floating) and low-flying low-speed air targets under the conditions when the enemy fires back.

The vehicle can fulfil a wide range of combat missions under various climatic, weather and terrain conditions in the ambient temperature range of -40 to +55 degrees Centigrade, air humidity of up to 98% at temperature of +25 degrees Centigrade, height above sea level of up to 3000 m and with ambient air dust content available in real terrain conditions.

The BTR-4 armoured personnel carrier (APC) is intended to transport personnel of mechanized infantry units and to provide fire support in combat. The APC is used for equipping military units capable of carrying out combat actions in various conditions, including NBC environment. The APC can be used as a basic vehicle for equipping quick reaction forces and marine corps. The APC can fulfil its tasks both by day and at night, in various climatic conditions, on hard surface roads and in cross-country. The operating temperature range of the APC is -40 to +55°C.

#### About KMDB:

The Kharkiv Morozov Machine Building Design Bureau (KMDB) is a state-owned enterprise, which is now Ukraine's leading design authority for armoured fighting vehicles and used to play a key role in the development of armoured tracked vehicles in the former Soviet Union.

The contemporary activities of the KMDB are distinguished by three main factors:

- the ability to offer customers a wide range of armoured vehicles and other products for both military and civil use, as well as obsolete vehicle upgrade packages
- the provision of equipment closely tailored to customer's individual requirements
- the availability of long-term support for the end user



### Exhibitions

#### Textron Marine & Land Systems, Granite Tactical Vehicles to Showcase HMMWV Recap System at AUSA Winter

NEW ORLEANS and MOUNT AIRY, N.C. -- Textron Marine & Land Systems, an operating unit of Textron Systems, a Textron Inc. company, and Granite Tactical Vehicles Inc. announced today that its Survivable Combat Tactical Vehicle (SCTV) system will be shown in outdoor Booth 3328 at the Association of the U.S. Army (AUSA) Winter Symposium.

The SCTV system is being offered by the Textron/Granite team as the solution to the U.S. Army's proposed High-Mobility Multipurpose Wheeled Vehicle (HMMWV) recapitalization program. SCTV is a complete vehicle system designed for seamless integration with the HMMWV chassis to handle the asymmetric battlefield with advanced technologies and features that provide increased mobility, survivability and performance for all HMMWV variants. The



Textron/Granite team has incorporated rugged, durable, tested components, including a blast protected crew compartment, or capsule, with total system integration.

"The SCTV is more than a modernization of the HMMWV, it is revolutionizing the HMMWV," said Granite Tactical Vehicles President Chris Berman. "The protection upgrades hung on the HMMWV through the years have seriously compromised the performance of the vehicle. It was never intended to handle the weight it is being required to carry or provide protection levels required on today's battlefield. Our SCTV gives soldiers and Marines the performance and protection they need in the near-term."

The SCTV has undergone independent and U.S. Marine Corps blast and mobility testing. The independent blast testing confirms the vehicle is capable of protection levels equal to Mine Resistant Ambush Protection (MRAP) level 1 specifications. While providing unparalleled protection, the SCTV's mobility and performance exceed currently fielded HMMWVs by reducing overall weight and integrating upgraded suspension and engine technology.

"Today's operational tempo and combat challenges demand greater tactical mobility and survivability of the HMMWV," said Textron Marine & Land Systems Senior Vice President and General Manager Tom Walmsley. "With the cost and operational effectiveness of our SCTV, combined with our track record of on-time deliveries and low-risk performance, the Textron/Granite team is ready to bring the HMMWV fleet into the future."

and land C4I systems to the world's defense forces including the United States, NATO, France and the Gulf Cooperation Council for more than 45 years.

## Defence Industry

### KMW and Daimler AG sign service contract for military deployment regions

Krauss-Maffei Wegmann (KMW) and Daimler AG signed a service contract in Munich/Worth today for the maintenance and repair of Mercedes-Benz trucks and G-models on international deployments of the German armed forces and their allies.

Under the terms of the contract, KMW is to provide technical support in the field for all military vehicles from the Würth-based truck manufacturer which are deployed on international missions of NATO, the EU and the UN.

This will substantially alleviate the workload for armed forces such as the German army in Afghanistan, enabling them to focus on their essential military tasks. KMW already possesses extensive experience in the maintenance and repair of armoured wheeled and tracked vehicles in crisis regions. A comprehensive service network throughout the relevant areas in Afghanistan or Kosovo, for example, with the company's own service personnel and its own repair facilities at the allied forces' camps, ensures the high availability of the urgently required vehicles.

"Teaming up with Daimler in this area is of major strategic significance to KMW. Daimler's trust in our capabilities highlights the professional service which we have been providing for numerous allied forces for many years now," explains Frank Haun, CEO at KMW. "This agreement represents an important step in consolidating our long-standing cooperation. We are pleased that we are able to offer our customers the services of KMW, which is recognised as the best in its field," notes Yaris Pърън, manager of Mercedes-Benz's Würth plant and head of Mercedes-Benz Special Trucks.

In addition to providing expert personnel and workshops in the field, the scope of services from KMW in the deployment regions includes an option for the customers to use a worldwide logistic system for the supply of replacement parts. Technical support services are also possible, such as remote diagnosis via the company's own telemaintenance system, which links up soldiers on the scene with technical specialists at the Munich service centre in real time via satellite - e.g. for the purpose of examining vehicles with severe combat damage.

## Exhibitions

### ThalesRaytheonSystems announces Command View® Mobile for C4I solution

ABU DHABI, UAE, -- ThalesRaytheonSystems has developed a mobile application for its Command View C4I product that will enable users to gain essential situational awareness and decision-making information on a variety of commercially available handheld devices.

"Command View Mobile will provide some of the identical situation information found in the command center environment on a portable platform," said Kim Kerry, chief executive officer, ThalesRaytheonSystems, U.S. Operations. "Critical C4I information is now securely available anywhere there is wireless connectivity, so that there is no time lost and key personnel have the information they need, when they need it."

Command View supports joint, combined and component operations at the strategic, operational and tactical echelons and serves as the integrator for all information sources. Command View is scalable to meet any size requirement and is adaptable for future growth and evolution.

ThalesRaytheonSystems has been delivering state-of-the-art, fixed and deployable air C4I and joint

## Defence Industry

### MBDA Receives a First Export Order for Multi Purpose Combat Vehicles

Four years after launching its self-funded development of MPCV (Multi Purpose Combat

Vehicle), MBDA has signed a contract with an export customer, for whom MBDA will be integrating this air defence system's turrets, missile launchers and firing controls onto the high mobility armoured vehicles chosen by the military user.



The new MPCVs will be integrated within the customer's existing air defence architecture which is based on already in-service systems deploying MBDA's Mistral missile. MPCV will add a number of inherent qualities such as its fire power, reactivity, its protection of personnel as well as its operational coverage.

Final qualification of the MPCV system was pronounced in 2010 after a series of test firings. These tests culminated with a firing demonstration against a number of targets representing a saturating air attack. Various overseas delegations witnessed this demonstration which took place at the DGA's (France's Direction G n rale de l'Armement) missile test firing centre at Biscarosse in the Landes region of France. The first series production MPCV vehicle should be delivered as of 2013.

Commenting on this latest export success, Antoine Bouvier, Chief Executive Officer of MBDA said: "The MPCV programme illustrates how MBDA can optimise the investments already made by its customers. Starting from the base of a market standard such as Mistral missile of which some 17,000 have already been produced, we have devised an easy to use and highly automated system which significantly increases the capabilities of the missiles already in service with our customers".

## Defence Industry

### France orders Wasp remote-controlled turrets for armored vehicles



Abu Dhabi, IDEX 2011 -- French defense procurement agency DGA has placed an order with Panhard, working with program co-contractor Sagem (Safran group), for 100 Wasp turrets as part

of an operational emergency acquisition procedure.

These Wasp turrets will be used on the French army's PVP and VBL light armoured vehicles.

Developed jointly by Panhard and Sagem, the Wasp (Weapon under Armor for Self-Protection) is a light turret that is remotely-controlled from inside the vehicle. It is fitted with a MAG 58 7.62 mm machine gun, coupled to a day/infrared sight and observation scope derived from the FELIN soldier modernization program, for day or night operation. Incorporating lessons from previous deployments, the Wasp turret significantly enhances self-protection for soldiers, while enabling quicker responsiveness under armor.

Light and compact, the Wasp also features a small visual signature. Because of the weapon's wide range of elevation/depression (-40°/+ 80°), it is ideally suited to combat in urban or mountain environments. It is also designed to subsequently add a fusion function for the daytime and thermal channels, providing the daytime ability to "see through" camouflage.

By combining Panhard's expertise in the design of armored combat systems with the technological innovations derived from Sagem-led defense programs, especially FELIN, the Wasp turret offers high performance for the price, while expanding the operability of light armoured vehicles.

## Exhibitions

### Oshkosh Defense to Debut M-ATV Equipped With TOW Weapon System at AUSA Winter 2011



OSHKOSH, Wis. -- Oshkosh Defense, a division of Oshkosh Corporation, will unveil an MRAP All-Terrain Vehicle (M-ATV) Multi-Mission Vehicle (MMV) equipped with Raytheon's tube-launched, optically-tracked, wire-guided (TOW) weapon system at AUSA Winter 2011 in booth 1601.

The M-ATV's off-road capabilities offer the military the potential to take the TOW system beyond forward operating bases and into mountainous, challenging landscapes in places like Afghanistan.

"The exceptional tactical mobility that the M-ATV family of vehicles affords the armed forces has led to new opportunities to provide support in other capacities, including weapon systems," said Ken Juergens, vice president and general manager of Joint Programs for Oshkosh Defense. "We designed new M-ATV variants in a collaborative manner with our customers, just as we did

with the base vehicle, and we remain prepared for a quick-turnaround production as needed.”

The TOW system is a long-range precision weapon system used on ground, vehicle and helicopter platforms. The system is in service with more than 40 countries and integrated on more than 15,000 platforms worldwide. Oshkosh designed the M-ATV MMV variant to support missile-carrier, reconnaissance and command-and-control operations.

In addition to the M-ATV MMV, Oshkosh also is continuing to explore new potential mission solutions for the M-ATV family of vehicles with the design of the M-ATV 2.5 Cargo variant to support resupply operations. The company currently produces the M-ATV base, tactical ambulance variant and Special Forces Vehicle (SFV) variant for the U.S. military.

Also at AUSA Winter, Oshkosh will have a High-Mobility Multipurpose Wheeled Vehicle (HMMWV) equipped with the Oshkosh TAK-4® independent suspension system and a V-shaped hull. The upgrades – developed in response to the Army’s request to industry for solutions to recapitalize its fleet – offer improved survivability, increased mobility and a restored payload capacity. Oshkosh has been helping militaries recapitalize and retrofit vehicles for more than 50 years. The company also will have a Family of Medium Tactical Vehicles (FMTV) wrecker variant on display outside the convention center during the show.



## Exhibitions

### New joint venture brings revolutionary armoured vehicle technology to the Gulf



Innovative armoured vehicle technology from South Africa's largest independent defence business makes an impact in the Middle East.

South Africa's Paramount Group is using IDEX, the Middle East's largest defence technology exhibition, to announce a major new joint venture to bolster its presence in the Gulf.

The joint venture, with the UAE's International Golden Group (IGG), has been signed in response to increasing interest in Paramount's IED and mine protected armoured vehicles from Gulf State countries.

IGG, with its established international reputation in the introduction of key equipment to the Middle East, will market and distribute Paramount vehicles – including its new revolutionary Paramount Low Profile Vehicle (PLPV) – in the region. The PLPV was launched

recently under the name 'Mbombe' and IDEX 2011 will be the first time it has been seen outside Africa.

The partnership will focus initially on the market in the United Arab Emirates, with a view to bringing some of the world's finest armoured vehicles, pioneered in South Africa, to the wider region.

Announcing the joint venture, Ivor Ichikowitz, Executive Chairman of the Paramount Group, said: “Our partnership with IGG continues the revolution in armoured vehicle technology and design for which South Africa is world-renowned. By bringing our vehicles to the Middle East, IGG will be presenting one of the world's most sophisticated defence purchasing markets with the very pinnacle of new technology and design in armoured vehicles.

“Our vehicles are designed, constructed and proven in some of the world's harshest terrain, very much with the Middle East in mind. Now with IGG we have a superb opportunity to work with the UAE's acknowledged armoured vehicle experts to build a strong and deep relationship.

“Bringing Paramount's systems to the Middle East in partnership with IGG very much reflects the realities of current global politics which are driving armed forces and governments to plan for future conflict by sourcing new generations of vehicles to answer the changing threats they face.”

In the medium term the joint venture will be founded on shared technology and the strengthening of economic and political ties between South Africa and the UAE. In the longer term it calls for the establishment of manufacturing bases in the UAE to serve the Middle East and Asian markets.

The UAE has a long standing tradition of commercial, economic and cultural partnership with South Africa, and Paramount's milestone agreement with IGG is strengthening that relationship.

Fadil Saif Al Kaabi, CEO of IGG said that: “This marks another milestone in the growth path of IGG This technology partnership makes perfect sense for us as a key player in the Middle East defence sector. Paramount's recent technological advancements in mine- and IED-protection for armoured vehicles represent a huge leap forward in the solutions available to tackle the changing threat in the region. We look forward to a successful partnership with Paramount built on the established mutual understanding and appreciation between our two nations.”

Paramount already has in place manufacturing partnerships with Ashok Leyland in India and to produce Matador and Marauder MPVs in Azerbaijan in partnership with the country's Ministry of Defence Industries.

The International Defence Exhibition and Conference (IDEX) takes place from Sunday 20th to Thursday 24th February at the Abu Dhabi National Exhibition Centre (ADNEC), Abu Dhabi, United Arab Emirates.

Paramount Group's latest vehicle, PLPV, is a revolutionary low profile six wheeled infantry fighting vehicle which can be configured to take on all types of



combat roles and is ideally suited to handle a wide range of conventional and non-conventional threats. The 'Mbombe' PLPV will be on display on the IGG stand in Hall 5: stand A30.



## Exhibitions

### Otokar to Exhibit its Armoured Vehicles at IDEX



ABU DHABI, UAE -- Otokar, the biggest privately owned company of Turkish Defence Industry, presents its new armoured vehicle 6x6 ARMA, worldwide known 4x4 armoured vehicle COBRA and its mine resistant troop carrier "KAYA" at the show in Abu Dhabi, UAE, between 20th and 24th February.

Otokar exhibits 6x6 ARMA in Gulf Region for the first time. "ARMA is a new product family within the Otokar's the tactical wheeled armoured vehicle range with modular multi-wheel configuration" said Mr. Serdar GURGÜZ, General Manager of Otokar. Reminding that Otokar launched ARMA at Eurosatory 2010 Mr. Gorguc continued: "First ARMA contract had been signed only 6 months after we launched the family. We are glad to see the trust to Otokar's armoured tactical vehicles. We are expecting ARMA to attract visitors with its modular design, mobility and survivability." During IDEX, Otokar displays ARMA 6x6 Armoured Vehicle equipped with Vetronics (Vehicle Electronics). The system is composed of Computer Display Unit, Power Distribution Unit and Remote Terminal Units developed by Otokar.

#### 6x6 ARMA

The 6.4 m long, 2.7 m wide and 2.2 m high ARMA 6x6 variant has an 19 tonnes combat weight 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 7.8 m and the vehicle rides on independent hydropneumatic suspension, offering respectable off-road mobility. 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 40 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 for the crew and mission equipments. With this internal layout, all the personnel especially the commander can keep eye contact continuously among each other.

6x6 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 armoured monocoque steel hull and all personnel is seated on anti-mine seats.

ARMA vehicle's development started in 2006 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.

The family will be complemented by an 8x8 version late in 2011.

#### KAYA

During IDEX Otokar displays KAYA Troop Carrier of its KAYA mine resistant armoured vehicle family. The vehicle provides not only superior mine and ballistic protection but also high levels of cross country capability.

In order to provide excellent cross country capabilities, the KAYA was developed on the Daimler Chrysler Unimog 5000 running chassis. Armoured 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 protected vehicle with its flexible body configuration can easily be configured for different missions along with varying user needs.

Thanks to Otokar's engineering and R&D capabilities, mine blasts under the hull and wheels were simulated by special software during the design period. Mine Blast tests were performed successfully according to NATO standards. Its performance and cross country capabilities are also successfully tested on different terrain conditions.

#### COBRA

Otokar's worldwide known 4x4 armoured vehicle COBRA is displayed with remote controlled weapon station at IDEX 2011. The COBRA is in duty in various countries including the Gulf Region. The Cobra provides superior mobility, a high level of protection, adaptability to various missions and a low logistic footprint.

The powerful turbo diesel V8 engine and high power/weight ratio give COBRA, power to navigate in the toughest terrain conditions. The Independent Suspension, the Central Tyre Inflation Systems along with the permanent four-wheel drive, automatic

transmission and front/rear 2 speed lockable transfer box ensure the highest level of mobility. The optimised body angles of the monocoque hull structure grants COBRA a reliable constitution for the superior protection resulting an excellent level of built in survivability.

Prioritizing the concepts of safety and comfort of the crew, COBRA transports up to 9 personnel from one mission to another. Thanks to the optimised angles of the armoured body in monocoque structure, COBRA differentiates itself with remarkable protection against explosives and mines.

Being ready to accomplish any type of mission, COBRA is an ideal platform for different weapon systems. Thanks to its modular structure and advanced engineering, various types of weapon stations and turrets can be adapted to COBRA in accordance with the vehicle type and mission definition.

Thanks to the modular body structure, COBRA is a multi purpose platform, designed for various military missions such as Personnel Carrier, Weapon Platform, NBC Reconnaissance, and etc. Common platform concept also helps the training, maintenance, and the logistic support planning.

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## Contracts

### **BAE Systems` Bradley Fighting Vehicles to receive life cycle enhancements through \$24 million award**

ARLINGTON, Virginia -- BAE Systems has been awarded three contract modifications worth a total of \$24.5 million to perform various vehicle upgrades and provide field service support for Bradley Fighting Vehicles.

Each contract focuses on various areas within the Bradley life cycle including engineering enhancements, such as suspension upgrades, as well as field service, training and maintenance services.

“The services under this contract provide continued upgrades to one of the U.S. Army’s most survivable vehicles,” said Joe McCarthy, vice president of the Heavy Brigade Combat Team at BAE Systems. “These contract modifications also reflect BAE Systems’ continued commitment in supporting the soldier and the Heavy Brigade Combat Team through fleet life cycle management.”

Bradley Fighting Vehicles continue to provide outstanding survivability, mobility and lethality to U.S. soldiers in close-combat urban situation as well as in open-combat. The Bradley fulfils five critical mission roles – infantry fighting vehicle, cavalry fighting vehicle, fire support vehicle, battle command vehicle an engineer squad vehicle – for the Army’s Heavy Brigade Combat Teams.

The majority of the work will be performed by the company’s existing workforce at its facility in Santa Clara, California. Work will also be performed at BAE Systems sites in Sterling Heights, Michigan and York, Pennsylvania and is anticipated to be complete by

November 2011.

BAE Systems designs, manufactures and supports Bradley Fighting Vehicle through its U.S. Combat Systems business. U.S. Combat Systems is a modern, efficient, full-spectrum developer, integrator and supplier of the U.S. Army’s Heavy Brigade Combat Teams, an integral developer of mine-protected and future combat vehicles and a top producer of naval guns and missiles launchers.

The contracts are administered by U.S. Army TACOM Life Cycle Management Command.

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## Defence Industry

### **Ashok Leyland Defence and KMW sign MOU on strategic partnership**

Chennai (India) based Ashok Leyland Defence Systems Ltd. and Krauss-Maffei Wegmann GmbH & Co. KG from Munich (Germany) have concluded Memorandum of Understanding during the IDEX defence exhibition in Abu Dhabi today to co-operate in the development of advanced defence systems for the Indian Defence establishment as well as other defence forces worldwide.

The scope of the co-operation will initially include the development of artillery systems, combat systems, armoured wheeled vehicles, recovery vehicles, bridge laying systems and other similar products.

Ashok Leyland Defence Systems (ALDS), a newly formed company in which the Hinduja flagship, Ashok Leyland, has 26% equity, brings to this strategic alliance the expertise and experience of designing and developing Defence vehicles that has made Ashok Leyland the largest supplier of logistics to the Indian Army with over 60,000 of its Stallion vehicles forming the Army’s veritable logistics backbone.

Krauss-Maffei Wegmann (KMW) will provide the technology and the technical assistance that will be required for the development of these defence systems. A 170-year-old company, KMW leads the market for highly protected armoured wheeled and tracked vehicles. The armed forces of over 30 nations worldwide rely on their systems such as the MBT LEOPARD 2, the artillery system PzH 2000 or the highly protected DINGO 2.

#### **Executive comments:**

Dr. V. Sumantran, Chairman, Ashok Leyland Defence Systems: “This strategic partnership seeks to harness the formidable skills of both companies, namely, the technological bandwidth of KMW and our approach to innovations aimed at cost advantage. For ALDS, this brings a new range of product opportunities with which we hope to fulfill India’s growing Defence needs and over time to address select overseas markets.”

Frank Haun, CEO & President, KMW: “The partnership with ALDS is a further consequent step in KMW’s strategy to internationalize its business. Along with ALDS we are now able to jointly develop future Indian defence solutions based on our proven and worldwide leading technologies.”

About Ashok Leyland Defence Systems – ALDS, the

Defence sector affiliate of the Hinduja flagship Ashok Leyland, leverages the 63 year heritage of Ashok Leyland built upon a range of products and services that have been the mainstay not only of ground mobility in India, but also importantly India's defence logistics vehicles. ALDS has embarked on a range of new developments covering the domains of Defence logistics vehicles, tactical vehicles, Defence communication systems, etc.

## Exhibitions

### State Company UKRSPECEXP represents Ukraine at the International Defence Exhibition and Conference 'IDEX 2011' (Abu Dhabi, UAE) to be held from 20th till 24th February, 2011



The 10th Anniversary International Defence Exhibition and Conference IDEX 2011, in which Ukrspcelexport SC is involved, was opened in Abu Dhabi, UAE, on February 20, 2011.

The Ukrainian exposition, organized by SC UKRSPECEXP and under supervision of Dmitry Salamatin, a director general of the State Concern UKROBORONPROM, includes a ready stand and outdoor space. There are dummies of the anti-tank missile systems (ATMS) 'Skif', 'Korsar', 'Baryer-V', of the gun-launched missiles 'Kombat' and 'Stugna' on the stand. Also are exhibited thereon a dummy of the 'Sokil-2' container-launched unmanned aerial vehicle as well as 'ECOTest' radiation control devices, models of BTR-3E1 and BTR-4 armoured personnel carriers, MT-LB armoured personnel carrier-tractor, pistols and rifles manufactured by 'FORT', a state-owned science-industrial association under the Ministry of Internal Affairs of Ukraine.

Tanks "Oplot", T-72B equipped with the 5TDFM engine, armoured personnel carrier BTR4 with the 3TD engine and fighting module "Parus", as well as the infantry fighting vehicle BMP-1M with the fighting module "Squall", heavy truck KrAZ 5233BE are displayed on the outdoor area allocated to Ukraine.

To better become acquainted with production and prospective developments of the military-industrial complex of Ukraine the visitors are provided with comprehensive information and advertising material.

During the first day of the exhibition the Ukrainian exposition was visited by some members of the ruling family of the United Arab Emirates, representatives of the Ministry of Defense of Azerbaijan and the Ministry of Defense of Belarus.

Moreover, apropos of the 10-th anniversary exhibition «IDEX 2011» a reception was held by the State Company UKRSPECEXP. The reception was attended by the official delegation of Ukraine headed by Vladimir Omeljanchuk, a deputy Minister of Defense of Ukraine, Jury Polurez, an Extraordinary and Plenipotentiary Ambassador of Ukraine in the United Arab Emirates, the executives of the Ukraine military-industrial complex enterprises, representatives of the armed forces and defense industry enterprises of the United Arab Emirates, members of the official delegation of the Republic of Kazakhstan, representatives of the Belarus Ministry of Defense, of the Kuwait embassy in the United Arab Emirates.

During the first two days' work there were held official meetings and negotiations between the SC UKRSPECEXP's management and the members of delegations of the United Arab Emirates, Kuwait, Republic of Azerbaijan, Belarus, representatives of other foreign business community and official establishment. These negotiations and official meetings are expected to result in strengthening Ukraine's defense industry complex positions on the promising market of armaments in the United Arab Emirates.

## Contracts

### BAE Systems awarded \$41 million contract to purchase parts for Bradley reset

YORK, Pennsylvania -- BAE Systems was awarded a \$41 million contract modification to finalize the procurement of situational awareness items required for the reset of 101 Bradley Operation Desert Storm Situational Awareness (ODS SA) vehicles.

“The procurement of these situational awareness parts will provide our soldiers with a modernized vehicle that will help to protect them and aid in performing successful missions,” said Joe McCarthy, vice president and general manager of the Heavy Brigade Combat Team Systems for BAE Systems.

Under this contract, BAE Systems will continue to purchase 101 kits of long-lead items and additional parts in preparation for the reset of Bradley ODS SA vehicles. The company will use the acquired items in restoring the Bradleys to pre-combat condition and upgrading them to the improved situational awareness capability.

This recent contract provides the balance of funding, worth \$41 million, for a contract modification BAE Systems was awarded in December 2009 for \$74 million to purchase long-lead items for the reset of 101 Bradley ODS SA vehicles. The total value of the finalized Bradley ODS SA contract is \$115 million.

The contract was awarded by U.S. Army TACOM Life Cycle Management Command.

Bradley Fighting Vehicles continue to provide outstanding survivability, mobility and lethality to U.S. soldiers in various combat situations. The Bradley fulfils



five critical mission roles - infantry fighting vehicle, cavalry fighting vehicle, fire support vehicle, command vehicle and engineer squad vehicle – for the U.S. Army's Heavy Brigade Combat Team.

BAE Systems designs, manufactures and supports Bradley Fighting Vehicles through its U.S. Combat Systems business. U.S. Combat Systems is a modern, efficient, full-spectrum developer, integrator and supplier of survivable, lethal ground and naval combat platforms. U.S. Combat Systems is also a main supplier of the U.S. Army's Heavy Brigade Combat Team, an integral developer of mine protected and future combat vehicles and top producer of naval guns and missile launchers.



### Defence Industry

#### Navistar Defense Offers New Mrap Ambulance Vehicle Variant



FORT LAUDERDALE, Fla. -- Navistar Defense, LLC today showcased its International® MaxxPro® Dash Mine Resistant Ambulance Protected (MRAP) ambulance variant at the Association of the United States Army (AUSA) Winter Symposium and Exhibition.

The company can also offer ambulance kits to convert existing MRAP vehicles into blast-protected ambulances.

“Our warfighters are challenged to complete a variety of missions and survivability continues to be key,” said Archie Massicotte, president, Navistar Defense. “After fielding nearly 8,000 MaxxPro vehicles, we are proud to make the Dash ambulance available to help support the ongoing critical need for MRAP vehicles.”

The Dash Ambulance includes an easy-to-use litter assist system as well as a protected work space benefitting medics and patients. This solution, paired with the company's DXM™ independent suspension, helps medical aid navigate rough terrain to get where it is needed.

In addition to new vehicles, Navistar offers a MaxxPro ambulance kit, which can be installed into existing MaxxPro vehicles including the MaxxPro Base, Plus and Dash variants.

As one of the leading providers of MRAP vehicles, Navistar is committed to expanding its family of vehicles to serve multiple mission types. The company also continually develops vehicle enhancements. One of these enhancements, the DXM independent suspension, is currently being retrofitted onto existing MaxxPro vehicles.

Navistar International Corporation is 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. Additional information is available at [www.Navistar.com/newsroom](http://www.Navistar.com/newsroom).



### Defence Industry

#### Northrop Grumman's Next-Generation FBCB2 System Approved for Fielding



MCLEAN, Va. -- The U.S. Army has approved for fielding the next-generation Force XXI Battle Command Brigade and Below (FBCB2) system, called Joint Capabilities Release (JCR).

FBCB2 JCR, developed by Northrop Grumman Corporation, will give warfighters significantly enhanced capabilities for battle command.

FBCB2 is the key situational awareness and command-and-control system used by U.S. and coalition forces. More than 95,000 FBCB2 systems have been deployed worldwide, forming the world's largest tactical network. The system has been successfully fielded for 16 years.

JCR will be incorporated into the LandWarNet/Battle Command Baseline for fielding to deploying units scheduled to receive software block 2.

JCR upgrades include an increase in network bandwidth that allows the system to move more information to more users within seconds rather than in minutes. JCR also provides a common FBCB2 platform solution for both the Army and U.S. Marine Corps.

"The ability to receive and share battlefield data through a broad-based, reliable network is increasingly important and critical to the mission. JCR provides new collaboration tools and other enhancements that are orders of magnitude more capable than what is available to soldiers and Marines today," said Joe G. Taylor, Jr., vice president of the Ground Combat Systems business unit within Northrop Grumman's Information Systems sector.

The system includes Blue Force Tracking 2 (BFT 2), a

high-tech, high-speed force-tracking satellite-communications network. The Army says BFT 2 will be roughly 10 times faster than the existing BFT system. When JCR is fielded with the new BFT 2 transceiver and network upgrade, friendly positions will be updated in seconds.

With JCR, warfighters will also be able to share more broadly critical, sensitive information. The BFT 2 will include a new Programmable In-Line Encryption Device that is fully compatible with JCR.

Other new JCR capabilities include the Commercial Joint Mapping Tool Kit and an over-the-air self-descriptive situational awareness (SDSA) capability. SDSA will eliminate inflexible fixed databases and allow FBCB2-equipped units to change task organizations in the field to meet new mission requirements.

JCR represents a major departure from the original FBCB2 architecture. The new JCR approach is called the "Battle Command Product Line" (BCPL) and is designed to correct the "stovepipe" development approach taken by earlier command and control systems. Properly executed, BCPL will enable the Army to develop, test, certify and deploy software capabilities more quickly and at a lower cost.

The version that will be fielded is JCR-Vehicle L-Band (v) 1.1.1.4 V-4. The Army and Marine Corps are currently testing JCR V1.3.1 and considering it for a fielding upgrade this year.

FBCB2 links communication devices, sensors, vehicles, rotary-wing aircraft and weapons platforms in a seamless digital network to provide a clear, continuous and common picture of the battlefield. Most FBCB2 systems communicate via a satellite-based network; about 30 percent use the Enhanced Position Location Reporting System, or EPLRS, tactical radio network.

Northrop Grumman Corporation was awarded the first FBCB2 development contract in January 1995.



### Future Technologies

#### Lockheed Martin JLTV Platform Maturity Grows Beyond 145,000 Combined Testing Miles



DALLAS, TX -- Lockheed Martin's Joint Light Tactical Vehicle (JLTV) has reached a key maturity milestone, accumulating over 145,000 combined internal and government testing miles across its family of vehicles.

U.S. Army and Marine teams continue to accumulate durability miles as part of a 12-month test and evaluation phase at Aberdeen Proving Grounds, Md., and Yuma

Proving Grounds in Yuma, Ariz.

"Reaching 145,000 combined testing miles shows that our vehicle design is mature and robust, and can stand up to the harsh conditions in which they will operate," said Scott Greene, vice president of Ground Vehicles at Lockheed Martin Missiles and Fire Control. "Our commitment to performance is equal to our commitment to affordability, and those qualities will only improve as we continue to optimize our design for an Engineering and Manufacturing Development proposal later this year."

Ten Lockheed Martin JLTV variants are undergoing government evaluations, as part of the Technology Development (TD) phase of the JLTV program, expected to conclude in May.

"Our JLTV family of vehicles has delivered consistent performance throughout the TD phase," Greene said. "TD offers challenging mobility and reliability trials that have pushed our vehicles to the extreme, and we're proud of the dependability and maturity our platform has demonstrated to the customer."

Lockheed Martin leads a team pursuing the JLTV program, a joint services effort to return advanced mobility, protection and payload to deployed troops by replacing a portion of the aging High Mobility Multipurpose Wheeled Vehicle (Humvee) fleet. The JLTV program creates a common family of vehicles consisting of the Combat Tactical Vehicle and Combat Support Vehicle, both with multiple variants and associated companion trailers.

Formed in 2005, the Lockheed Martin-led JLTV team includes BAE Systems Global Tactical Systems, Alcoa Defense and JWF-Defense Systems.

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that employs about 132,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The Corporation's 2010 sales from continuing operations were \$45.8 billion.



### Defence Industry

#### Al Jaber Group Selects Oshkosh Defense Global Heavy Equipment Transporter for UAE Armed Forces



ABU DHABI and OSHKOSH -- Al Jaber Group, a privately owned, multi-faceted group of companies based in Abu Dhabi, has selected Oshkosh Defense, a division of Oshkosh Corporation, to provide the Global Heavy Equipment Transporter (HET) vehicle

to support United Arab Emirates Armed Forces.

Oshkosh will fulfill Al Jaber's initial purchase of Global HETs by early 2012.

"Our goal is to provide the UAE with the world's most powerful military vehicles as part of an overall logistics and fleet management solution," said Obaid Khaleefa Jaber Al Murri, Chairman, Al Jaber Group. "Our focus is on quality and long-term performance, and Oshkosh was the clear choice. They have a successful history of designing, manufacturing and sustaining heavy-duty vehicles for the U.S. Army and militaries around the world."

The new Global HET from Oshkosh Defense is a high-performance 6x6 transport vehicle with a 70 metric ton payload capability. With a powerful 700-horsepower engine, the Global HET is able to transport a main battle tank, armored vehicles, construction equipment and more. By transporting large-scale equipment on the Global HET, the military can reduce the wear on equipment and crew fatigue that typically occurs over long distances. Working closely with the Al Jaber Group, the new Global HET was designed to meet the requirements of the UAE Armed Forces and was rigorously tested and evaluated in extreme desert conditions. The terms of the agreement were not disclosed.

"We are pleased to partner with the Al Jaber Group to deliver and support the Oshkosh Global HET vehicle in the UAE," said Serge Buchakjian, senior vice president and general manager of International Programs for Oshkosh Defense. "We are committed to serving the Middle East region, and our relationship and initial sale to Al Jaber Group will allow Oshkosh vehicles to play an important role in supporting the UAE's Armed Forces programs."

humanitarian, security and disaster relief missions, such as support for the nation of Haiti in its recovery from the devastating 2010 earthquake.

Harris will provide Brazil with the Falcon III RF-7800V Very-High Frequency (VHF) handheld combat net radio, which provides forward-deployed forces with wireless voice and high-bandwidth data communications. The RF-7800V transmits data at rates up to 192 Kbps over the 30 to 108 MHz frequency band at 50 watts of power, making it the fastest VHF combat net radio available.

Harris also will deliver its Falcon II high-frequency manpack radio for enhanced secure beyond-line-of-site communications. HF radios are ideal for communicating in environments with restrictions on line-of-sight, such as mountainous or jungle regions. The radio covers the 1.6 Mhz to 30 Mhz frequency range. Harris also will provide training and customer service field support.

"Harris radios will provide our forces with superior voice and data communications that are significant to the wide variety of missions they face," said Brigade General Antonino dos Santos Guerra Neto, Commander of Communications and Electronic Warfare of the Army of Brazil. "Harris is providing rapid delivery of the equipment and exceptional support in the field and I appreciate their support of our tactical radio modernization programmes."

"Harris was awarded the orders after several months of challenging competitive field trials during which our radios were tested in a variety of environments that are inhospitable to tactical communication," said Andy Start, president, international business, Harris RF Communications. "Our radio passed the test based on vast experiences with tactical communications in more than 150 countries."

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### Defence Industry

#### Harris Receives \$14 Million in Orders from Brazilian MoD for Falcon Tactical Radio Systems



MELBOURNE, FL/ROCHESTER, NY -- Harris Corporation, an international communications and information technology company, has received \$14 million in orders from the Federative Republic of Brazil to provide Falcon III and Falcon II tactical radios to the country's armed forces.

Brazil will deploy the radios in a range of