

# Army Guide monthly



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## Defence Industry

**1,000th Warrior Repaired and Upgraded**

The 1,000th Warrior Infantry Fighting Vehicle to be repaired, rebuilt and upgraded at Shropshire's Defence Support Group (DSG) Donnington workshop will be put through its paces this month before returning to active front-line duty.

Stripped down to every last nut and bolt and then meticulously repaired and rebuilt, each Warrior is upgraded to the latest standard of equipment and protection before being re-painted and sent back to Army units in Afghanistan and elsewhere.

"These vehicles leave Donnington better-than-new," said DSG's Chief Executive, Archie Hughes. "The repair and maintenance team here is utterly committed to the safety and protection of the soldiers on the front-line and puts everything into turning these vehicles – often damaged because of accident or enemy action – into ultra-modern, finely-tuned fighting machines."

Major General Alan Macklin, the Army's Armoured Fighting Vehicles Group Leader said;

"Since it came into service over 20 years ago, Warrior has been the backbone of the British Army's armoured infantry's capability and has seen service in all the major conflicts in which the British Army has been engaged. Frequently adapted to deal with new threats and opportunities, Warrior will continue to be a stalwart for the British Army for many years to come.

Many Warriors have been through the workshop twice or more, and the 1,000th vehicle going through base overhaul is a watershed for all at Donnington who have been working on the overhaul, repair and upgrade of these Infantry Fighting Vehicles. The commitment and dedication of the workforce is truly impressive and is appreciated by many including by me and by those currently deployed on operations. It is, perhaps, appropriate that on my last day in post as Armoured Fighting Vehicle Group Leader I should be here with the Defence Support Group paying tribute to their workforce and to this platform which is one of the key vehicles saving the lives of our soldiers in both Iraq and Afghanistan today."

Among the Warriors to be repaired at Donnington was the one that Private Johnson Beharry of the 1st Battalion, The Princess of Wales's Royal Regiment drove in May 2004 when, in acts of remarkable gallantry in Iraq, he saved the lives of several colleagues and earned the Victoria Cross.

## Defence Industry

**U.S. Army awards Combat Identification contract to BAE SYSTEMS-THALES Team**

GREENLAWN, New York -- BAE Systems and Thales have been contracted by the U.S. Army to provide combat identification solutions for ground combat and combat support vehicles to minimize the risk of fratricide.

BAE Systems and Thales have been contracted by the U.S. Army to provide combat identification solutions for ground combat and combat support vehicles to minimize the risk of fratricide, commonly referred to as "friendly fire."

Under a \$3.3 million contract from the U.S. Army Communications and Electronics Life Cycle Management Center, the companies will study how millimeter-wave combat identification systems can address issues related to affordability, information security, and platform integration. The contract was awarded as part of the Joint Cooperative Target Identification-Ground program, an effort to develop a low-cost target identification capability for the Army and Marine Corps.

"BAE Systems and Thales are working together to develop a systems approach that combines Thales's expertise in combat identification equipment and BAE Systems' expertise in platform integration and network-centric combat identification capabilities," said Paul Markwardt, vice president of identification and surveillance for BAE Systems in Greenlawn, New York. BAE Systems is the lead in the partnership with Thales that began in 2006.

"Thales is proud to support this effort with its Combat ID technology and integration experience proven on a range of platforms and coalition exercises" said Merry Michaux, director of Thales's Communication Navigation Identification business line in Paris, France.

The contract covers the program's risk-reduction phase, focusing on ground-to-ground combat identification between platforms. The program specifies a NATO-standard all-weather, millimeter-wave interrogate-and-respond system for use on U.S. fighting vehicles to signal the presence of friendly. The system must be day-and-night capable and not affected by camouflage or battlefield obscurants.



## Defence Industry

**Serbia Hopes for APC Sales to Iraq**

NEWTOWN, Conn. -- Serbia hopes to find an export market for its Lazar armored personnel carrier and

believes Iraq may provide just such an opportunity, according to statements from the Serbian Defense Ministry.



During a visit last week to Iraq, Serbia's Defense Minister Dragan Sutanovac and his delegation took note of the enthusiastic response to a presentation concerning the Lazar APC.

Serbia is keen on stressing close ties with the new Iraqi government and, in particular, reigniting its former relationship as a defense supplier to the country. Recent initiatives in the latter regard have come under scrutiny, as in the case of a controversial defense contract reached in December 2007, which Serbian authorities estimated to be \$236 million (media reports placed the figure higher, at \$833 million). The deal included one item in particular that raised eyebrows - the sale of between 20 and 35 piston-engine Lasta 95 light training aircraft. At the time of the deal, the Lasta 95 prototype remained under development and mass-production still has not begun.

As for the Lazar APC, it is produced by domestic firm and principal state arms exporter Yugoimport SDPR. Named after a 14th-century Serbian prince, the Lazar is an 8x8 armored vehicle. It is armed with a 20mm cannon main gun and capable of carrying up to 10 troops. The vehicle can be fitted with add-on armor, such as explosive-reactive armor and is protected against mines by its V-shaped hull and high ground clearance. The Serbian Army is expected to purchase the Lazar for its own use in the near future.

FAIRFAX, Va. -- ManTech International Corporation announced today that it has received an up to \$355 million contract from the U.S. Army Program Executive Office, Combat Support and Combat Service Support, and TACOM Product Manager for Assured Mobility Systems to provide rapid repair and sustainment of mine-resistant, ambush-protected (MRAP) vehicles.

The competitively awarded contract has a one-year base, with a 12 month option period. The contract was awarded to ManTech by VSE Corporation, acting on behalf of the U.S. Army.

ManTech will provide maintenance, sustainment and logistics analysis to the RG31 and RG33 MRAPs. This contract extends current support and expands services to include maintenance and logistics for the RG33 for TACOM. This contract is requirements driven and will be heavily dependent on operational tempo in the Southwest Asia region.

"ManTech has been supporting mine detection, mine retrieval, and mine protected systems in Southwest Asia since 2003," said Robert A. Coleman, President and Chief Operating Officer of ManTech International Corporation. "We are proud to support these systems because we understand they play an important role in keeping our warfighters in Iraq and Afghanistan safe from the effects of many improvised explosive devices."

Headquartered in Fairfax, Virginia with approximately 7,900 professionals, ManTech International Corporation is a leading provider of innovative technologies and solutions for mission-critical national security programs for the Intelligence Community; the departments of Defense, State, Homeland Security and Justice; the Space Community and other U.S. federal government customers. The company operates in the United States and 40 countries.



## Robots

### U.S. Army Demonstrates Robotic Technologies



ABERDEEN PROVING GROUND, Md. -- The U.S. Army Environmental Command (USAEC) is sponsoring a public demonstration of robotic technologies to detect and remove unexploded ordnance (UXO) from training ranges Tuesday, Feb. 10, 2009 at Fort Bliss, Texas, beginning at 10 a.m.

The Army's Range Modernization Program will require construction on tracts of land that have been

## Defence Industry

### ManTech Wins Up to \$355M Two-Year Army Contract to Support MRAPs in Southwest Asia Expands prior JERRV mission to include additional vehicle types



previously used for training. Sometimes these lands contain unexploded ordnance that can be difficult to detect and dangerous to remove.

New applications for robotic equipment can be used to operate UXO detection equipment as well as vegetation and UXO removal equipment. Placing one or more cameras on the equipment allows for a technician to maneuver the device from a safe distance without compromising the level of accuracy.

This safer option for detecting and removing UXO is being demonstrated to measure time and cost efficiency. Most of the equipment being evaluated was developed by the Air Force Research Laboratory.

"Pairing these technologies with some of the different types of robotic digging devices the Air Force Research Laboratory has developed will hopefully make our method of modernizing training ranges more efficient," explains Kimberly Watts, UXO Technology Program Manager for USAEC.

The demonstration will give an opportunity for internal and external stakeholders to see state-of-the-art UXO detection and removal technologies.

The USAEC-sponsored demonstration will be conducted by the Aberdeen Test Center in cooperation with the Headquarters, Department of the Army G3 Training Support Systems Division; the U.S. Army Corps of Engineers Huntsville Center and Fort Worth District; the Air Force Research Laboratory, and Fort Bliss.

USAEC is the Army's point organization for supporting the implementation of environmental programs that facilitate sustainable Army training and operations while protecting the environment. We provide environmental program management and technical support products and services in support of Army training operations, acquisition and sound stewardship.

## Defence Industry

### Army falls for Arjun, induction by month-end



In what may be considered as a fillip for the country's indigenous production of defence equipment, the first-ever fleet of Indian-made Arjun battle tanks would be inducted into the Army by February end.

A total 45 tanks would form this armoured regiment and the first order of tanks is expected to arrive within next three weeks. In the first phase, 18-20 tanks would be

handed over to the Indian Army by the heavy vehicle factory, Avadi, Tamil Nadu. Already, about 85 tanks are in various stages of production.

Notably, the induction is coming almost 36 years after India announced its programme to build own tanks, and the process was laced with glitches and delays.

The tanks would be available at the Armoured Corps Centre and School (ACCS), Ahmednagar, Maharashtra, where training of personnel would be carried out. It would take a few months more before the Arjun is actually deployed in one of the armoured corps on field duties. It is likely that the deployment could be the Indo-Pak border where a majority of the 59 tank regiments of the Army are deployed.

The induction is coming despite stiff opposition from within the armed forces, which tested the tank to the hilt and agreed only after various parameters were met. Defence Minister AK Antony stood his ground and made it clear that the 58-tonne Arjun would be inducted, as it was working fine.

Well-placed sources in the government said the tanks earlier had to be handed over by January end, but the deadline was extended by a month. Sources in Defence Research and Development Organisation (DRDO) confirmed that the tanks were ready for shipment and handing-over to the Army.

Rather, the move implies that the induction would be carried out without waiting for the much-awaited comparative trials of the indigenous Arjun tanks with Russian-made T-90s, as had been desired by the DRDO.

## Defence Industry

### Order to integrate guided missile technology into new Puma IFV



Germany's Federal Agency for Defence Technology and Procurement (BWB) has placed an order with PSM GmbH of Kassel for a major expansion of the Bundeswehr's new infantry fighting vehicle, the Puma.

The Dusseldorf-based Rheinmetall Group has a 50% stake in PSM, the company in charge of the Puma project.

The order for integration of the multiple role lightweight guided missile system (MELLS) is worth approximately €68 million.

Equipping the Puma with this state-of-the-art guided missile system constitutes an important milestone in the overall programme, as well as underscoring the significance of this procurement project for the

Bundeswehr.

The MELLSS adds a necessary dimension to the Puma's capabilities profile, enabling it to perform the full range of missions for which it was originally intended. The system is part of an equipment package that encompasses an array of additional capabilities requested by the military but not yet contractually agreed.

The heart of the MELLSS system is the Spike guided missile from Eurospike GmbH, another company in which Rheinmetall holds a 50% share. Procurement of the Puma in series should commence this year, and a series order for MELLSS integration in every vehicle can now be expected as well.

The integration project involves mounting a launcher for two missiles in the vehicle turret. The Spike guided missile selected here is equipped with an optronic sensor head that transmits imagery via a fibre optic cable to the Puma fighting compartment, where it is displayed on a computer monitor. It can be controlled via the user interface of the Puma's fire control unit. This will enable Germany's new infantry fighting vehicle to engage heavily armoured enemy ground targets and helicopters as well as countering threats behind cover. In addition to the autonomous target tracking capability of the missile itself, the Puma crew can take over control of the missile when it is in flight, e.g. in order to switch to a higher priority target.



## Robots

### QinetiQ extends its TALON robot family to meet challenges of mine detection and counter-IED in Afghanistan



QinetiQ has extended its TALON family of robots, 2,500 of which have already been deployed in Iraq and Afghanistan, to ensure it continues to meet the ever-changing demands of detecting and clearing mines, unexploded ordnance and dangerous improvised explosive devices (IEDs) from a safe distance.

Detection and clearance of mines is of particular importance in Afghanistan, where large numbers of landmines litter the countryside as a result of almost continuous fighting since the late 1970s injuring 200,000 people according to United Nations estimates. The new TALON IV Engineer robot is particularly well suited to operations in the region with a longer, stronger reach, stronger grasp, and the ability to right itself.

“Our TALON IV Engineer robot, with its extra strength and reach expands the capabilities of troops to

remotely clear routes, minefields or other hazardous areas. And as with other TALON models it gives them the ability to see inside and around vehicles and other barriers, helping increase their overall safety,” explained Dr William Ribich, president of QinetiQ’s US Technology Solutions Group.

“TALON robots are extensively used by US forces and have already helped save thousands of explosive ordnance disposal and combat engineers from injury or possible death in the performance of their mission to clear mines and disarm IEDs. This new model delivers greater flexibility and means they can safely detect and deal with a greater variety of threats from a distance.”

Key features of the TALON IV Engineer robot include a full-swivel manipulator arm combined with a seven-foot reach. This means a portable mine detector can be taken out of a soldier's hands and mounted on the robot, so the search can be conducted remotely. Because the arm is longer, stronger and able to swivel, the robot can now also be used to remotely search inside bins, in higher vehicle cabs and flatbeds plus behind guard rails or other obstacles. The arm is also capable of lifting 65 pounds (30 kilograms), which means soldiers can clear heavy debris off IEDs remotely too.

Since its initial deployment in 2000, the TALON family of robots has expanded to include small, medium and large robots devoted to specific tasks, such as IED disposal, reconnaissance, hazardous materials detection, combat engineering support and Special Weapons And Tactics (SWAT) unit assistance. New robots introduced in the last year include MAARST<sup>TM</sup> and Dragon Runner<sup>TM</sup> SUGV which address the military’s need for standoff protection, over and above the successful use of TALON for counter-IED missions. Today, 2,500 TALON robots are deployed with the US military – far surpassing the deployment of any other military-use robot. They are also being evaluated or used by a growing number of other military and civil customers.



Dr Ribich concluded: “Combined with QinetiQ’s global repair and maintenance footprint, we provide complete mission support. The TALON family of robots stands ready to assist troops and security forces in any corner of the globe.”



## Defence Industry

### Harris Corporation Awarded Acquisition Contract for Multiband Land Mobile Radios

ROCHESTER, NY -- Harris Corporation, an

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international communications and information technology company, has been awarded a blanket purchase agreement (BPA) to provide land mobile radios to the U.S. Departments of Interior, Agriculture and FBI Training Academy.

valued at \$4.0M.

Harris is one of 13 companies receiving an award under a five-year delivery order with a ceiling of \$500 million from the U.S. General Services Administration, Federal Systems Integration and Management Center (FEDSIM).

Under terms of the contract, Harris will compete to sell land mobile radios to the National Park Service, Bureau of Land Management, FBI Training Academy, U.S. Forest Service and other federal agencies. Harris will provide multiband, multimission software-defined radios recently introduced by its newly formed Government and Public Safety business unit.

"As Harris was the first to introduce a multiband radio for use by U.S. agencies, the company is extremely pleased to receive this award," said George Helm, vice president and general manager, Government and Public Safety Business, Harris RF Communications. "Our growing family of public safety radios will provide full-spectrum interoperability, allowing federal agencies to talk with each other as well as their counterparts at the state and local level. Interoperability removes a critical barrier to better communication and coordination among public service agencies."

Harris is the leading provider of software-defined, multiband, multimode tactical radios to the U.S. government and other nations around the world. Harris recently committed to applying its expertise to bring state-of-the-art interoperability solutions to the public safety market. Introduced earlier this year, the Harris® RF-1033M and Unity™ XG-100 radios allow federal, state and local public safety agencies to communicate more effectively by delivering direct interoperability to the hands of the user. The Unity XG-100 covers all portable land mobile radio frequency bands in a single radio and is compliant with APCO Project 25 technical standards. The handheld radio is approximately the same size as currently fielded, single-band radios and will be available in 2009.

## Training And Simulators

### FAAC Incorporated receives USMC Operator Driving Simulator Contract Modification Valued at \$4.0M to Include Additional Key International Installations



Ann Arbor, Michigan -- FAAC Incorporated, part of Arotech Corporation's Training and Simulation Division, has received a contract modification

The modification adds a dual-simulator mobile system for Marine Corp Air Station Iwakuni, Japan; three full-motion 6DOF simulators for Camp Hansen Okinawa, Japan; and 3 additional dual-simulator mobile systems for U.S. based Marine Force Reserve sites.

This modification to FAAC's contract with the U.S. Marine Corps Systems Command, Program Manager for Training Systems (PM TRASYS), increases the total number of USMC ODS systems procured to 26 systems with a total of 51 simulators.

The USMC ODS originally employed in operations of M114 Up-Armored HMMWV and MK-23 with Marine Armor System has been extended to include USMC Mine Resistance Ambush Protected fleet of vehicles: 4 x 4 Cougar Category I, 6 x 6 Cougar Category II, and 6 x 6 Buffalo Category III vehicle. "The advantage of this system is that it is a one-stop shop for commanders who can train their Marines on a range of tactical vehicles," said Capt Garrett Hager, PM TRASYS USMC ODS Project Officer, quoted in the Show Daily during the recent Interservice/Industry Training, Simulation and Education Conference (I/ITSEC) in Orlando in December 2008.

### About Arotech's Training and Simulation Division

Arotech's Training and Simulation Division (ATSD) provides world-class simulation based training solutions. ATSD develops, manufactures, and markets advanced high-tech multimedia and interactive digital solutions for engineering, use-of-force, and driver training simulations for military, law enforcement, security, municipal and private industry personnel. The division's fully interactive driver-training systems feature state-of-the-art vehicle simulator technology enabling training in situation awareness, risk analysis and decision-making, emergency reaction and avoidance procedures, and conscientious equipment operation. The division's use-of-force training products and services allow organizations to train their personnel in safe, productive, and realistic environments. The division provides consulting and developmental support for engineering simulation solutions. The division also supplies pilot decision-making support software for the F-15, F-16, F-18, and JSF aircraft, as well as simulation models for the ACMI/TACTS air combat training ranges.

## Defence Industry

### Elbit Systems of America's Rugged Personal Digital Assistant Receives Frost & Sullivan 2008 North American DoD C4ISR Product Innovation of the Year Award

FORT WORTH, TEXAS, February 10 2009 – Elbit Systems of America, LLC, a wholly owned subsidiary of Elbit Systems Ltd. (NASDAQ: ESLT) announced the prestigious business research and consulting firm Frost & Sullivan presented the 2008

North American DoD C4ISR Product Innovation of the Year Award to its C4I Solutions Business Unit for the Rugged Personal Digital Assistant (RPDA) handheld computer.



Frost & Sullivan cited the Elbit Systems of America RPDA handheld computer as an innovative application of COTS technologies to address the needs of the US military. It is a reflection of Elbit Systems of America's focus on designing solutions that customers ask for. From the launch of the RPDA on September 2001 through its fifth-generation design today, the Elbit Systems of America RPDA has become the handheld solution of choice for many US Military programs. The Elbit Systems of America RPDA's unique modular system feature offers expandability and integration of several technologies into one compact handheld computer. It enables field customization for specific missions with the simple attachment of expansion backs. The expansion modules include combinations of Military or Commercial GPS, interfaces to military radios, 900MHz or 2.4GHz communications, Iridium Satellite Data Communications and other functions. These advanced electronic systems are consolidated into one unit with a brilliant display for daylight operation or Night Vision Goggle compatibilities for nighttime missions. The RPDA's rugged design enables the war fighter to carry one compact handheld computer into the field, leaving other devices behind. Elbit Systems of America's ongoing leadership in offering rugged products for the C4I Solutions field was another factor in Frost & Sullivan's decision to present this award.

Raanan Horowitz, President and Chief Executive Officer of Elbit Systems of America, LLC, stated, "Frost & Sullivan is a prominent consulting and research firm in our field. We are proud to receive this best practices award from a company in which our industry places such trust. This selection is the result of focusing the outcomes of our designs on the needs of our customers. It validates our approach and testifies to the company's leadership as a C4I and radio product solutions provider and attests to the quality of our products, services and on-going support."

#### **About the Product Innovation of the Year Award**

The Frost & Sullivan Award for Product Innovation is presented each year to the company that has

demonstrated excellence in new products and technologies within its industry. The recipient company has shown innovation by launching a broad line of emerging products and technologies.

To choose a recipient of this Award, the analyst team tracks all new product launches, R&D spending, products in development, and new product features and modifications. This is accomplished through interviews with the market participants and extensive secondary and technology research. All new product launches and new products in development in each company are compared and evaluated based on degree of innovation and customer satisfaction. Companies are then ranked by number of new product launches and new products in development.

In addition to the methodology described above, there are specific criteria used to determine final competitor rankings in this industry. The recipient of this Award has excelled based on one or more of the following criteria:

- Significance of new product(s) in its industry
- Competitive advantage of new product(s) in its industry
- Product innovation in terms of unique or revolutionary technology
- Product acceptance in the marketplace
- New product value-added services provided to customers
- Number of competitors with similar product(s)

#### **About Frost & Sullivan**

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best in class positions in growth, innovation and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best practice models to drive the generation, evaluation and implementation of powerful growth strategies. Frost & Sullivan leverages over 45 years of experience in partnering with Global 1000 companies, emerging businesses and the investment community from 31 offices on six continents. To join our Growth Partnership, please visit <http://www.frost.com>.

#### **About Elbit Systems of America, LLC**

Elbit Systems of America is a leading provider of high performance products and system solutions focusing on the commercial aviation, defense, homeland security, and medical instrumentation markets. With facilities throughout the United States, Elbit Systems of America is dedicated to supporting those who contribute daily to the safety and security of the United States. Elbit Systems of America, LLC is wholly owned by Elbit Systems Ltd. (NASDAQ: ESLT), a global electronics company engaged in a wide range of programs for innovative defense and commercial applications.

#### **About Elbit Systems**

Elbit Systems Ltd. is an international defense electronics company engaged in a wide range of defense-related programs throughout the world. The Company, which includes Elbit Systems and its subsidiaries, operates in the areas of aerospace, land and naval systems, command, control, communications, computers, intelligence surveillance and reconnaissance

("C4ISR"), unmanned air vehicle (UAV) systems, advanced electro-optics, electro-optic space systems, EW suites, airborne warning systems, ELINT systems, data links and military communications systems and radios. The Company also focuses on the upgrading of existing military platforms and developing new technologies for defense, homeland security and commercial aviation applications.



**Contracts**

**General Dynamics Awarded \$27 Million for RG-31 MRAP Spare Parts**



Ontario -- The Marine Corps Systems Command has awarded General Dynamics Land Systems-Canada a \$27.2 million contract modification for spare parts in support of RG-31 Mk5E vehicles under the Mine Resistant Ambush Protected (MRAP) program.

General Dynamics Land Systems, the Canadian company's parent corporation, is a business unit of General Dynamics.

These parts will be used to support vehicles that were manufactured under a delivery order awarded to General Dynamics Land Systems-Canada in July 2008 for 773 RG-31 Mk5E vehicles for the MRAP program. In total, 1,397 General Dynamics RG-31 vehicles have been ordered under the MRAP program.

Both contracts were signed through the Canadian Commercial Corporation, a Crown Agency of the Canadian Government.

General Dynamics Land Systems-Canada, located in London, Ontario, Canada is a business unit of General Dynamics Land Systems of Sterling Heights, Michigan. For over 30 years, more than 1900 highly skilled technical employees have designed, manufactured, delivered and supported to global customers a unique family of light armoured vehicles (LAV).

General Dynamics, headquartered in Falls Church, Va., employs approximately 92,300 people worldwide. The company is a market leader in business aviation; land and expeditionary combat systems, armaments and munitions; shipbuilding and marine systems; and information systems and technologies.



**Contracts**

**BAE Systems Reseives UK Order For Additional BvS10 Vikings**

ORNSKOLDSVIK, Sweden - BAE Systems has received an additional order for the armoured

all-terrain vehicle BvS10 VIKING from the British Ministry of Defence (MoD).



The contract is for nine vehicles, seven of the troop-carrying variant and two in command vehicle configuration. The vehicles are being ordered to maintain the capability in theatre.

It follows a contract from December 2008 which added mine protection to the current fleet of BvS10 VIKINGs currently in service with the British MoD. The latest vehicles will be built to the same MkI configuration build standard which includes the new mine protection kit.

"This contract recognises the performance the BvS10 VIKING delivers to the troops in theatre. It is key to us as a company to meet user needs, and the upgraded variant will meet those requirements," says Tommy Gustafsson-Rask, director of marketing and sales at BAE Systems Hagglunds.

The first vehicle in the contract is anticipated to be delivered directly from stock in February and the whole contract is expected to be delivered during the first quarter of 2009. The mine protection upgrades will be fitted following manufacture of the base vehicles.



**Defence Industry**

**BAE Systems To Equip U.S. Army Stryker, Abrams Vehicles With Thermal Cameras**



The BAE Systems Check-6™ ground vehicle vision system provides day, night and all-weather vision to ground vehicle crews, offering enhanced vision capability from within the protective armor of their vehicles. It offers a direct replacement to the lamp housings providing a field-upgrade capability to existing and new vehicles.



AUSTIN, Texas -- BAE Systems will equip U.S. Army Stryker combat vehicles and M-1 Abrams tanks with thermal cameras so combat crews can "see" outside the vehicles while remaining inside. The company received a \$45 million contract from General Dynamics to produce the camera systems.

The BAE Systems Check-6™ system, derived from the company's work in thermal weapon sights, features an infrared camera installed inside the vehicles' taillight housings. The system provides day, night, and all-weather visibility.

"Without the Check-6 system, the driver and crew cannot see what's behind them without leaving the protective cover of the vehicle," said Manette Fisher, program manager for BAE Systems in Austin, Texas. "Check-6 is a low-cost solution that gives soldiers much-needed rearward situational awareness while reducing their exposure to deadly threats. Reliable visibility also increases vehicle safety and can save lives."

Integrated in the existing vehicle taillight with no drilling or welding, the Check-6™ system can easily be installed on more than 300,000 current and planned U.S. Army vehicles.

Deliveries are set to begin in April. BAE Systems expects to deliver more than 12,000 Check-6™ systems over the next decade.



### Defence Industry

#### KMDB Unveils its BTR-4 8x8 Armoured Personnel Carrier at IDEX'2009



KMDB, the leader of the Ukrainian armoured construction, will demonstrate the latest variant of its BTR-4 APC with PARUS weapon station.

Depending on potential customers' requirements, the BTR-4 APC can be powered by one of the following three engines: Ukrainian 3TD, German Deutz, or Italian Iveco.

Due to its modular design, the BTR-4 can be used for development of a whole family of fighting vehicles. It also offers high level of ballistic and anti-mine protection. The basic protection level can be increased with the help of add-on armour.

The vehicle is fully amphibious and can move in water at speeds of 8-10 km/h.

#### Parus Remote-Controlled Overhead Weapon Station

The armament of the BTR-4 that will be demonstrated at IDEX'2009 consists of the Parus remote-controlled overhead weapon station (OWS) equipped with 30 mm 3TM-1 automatic gun, 40 mm automatic grenade launcher, 7.62 mm machine gun and Barrier anti-tank guided missile system (max firing range is 5,500 m). The main advantage of the Parus OWS is that it does not occupy the inner space of the vehicle and makes it possible to carry out maintenance from inside the vehicle under the complete armour protection of the hull.



#### About SOE 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



### Defence Industry

#### Elbit Systems Introduces: New Overhead Remote Controlled Weapon Station - Multi (ORCWS-M)

Fully Developed by Elbit Systems, the New 12.7 mm (0.5") caliber Station serves as an addition to the ORCWS Family of Products including 7.62mm, 40 mm AGL, UT-25mm and UT-30mm.

New threats and unconventional challenges have spurred military forces worldwide to equip for urban

warfare and low-intensity conflicts. Today's advanced ground forces are opting for wheeled, armored vehicles, characterized by speed, mobility and light weight, assuring rapid mobility and deployment. Looking to address the growing demand worldwide, Elbit Systems is pleased to announce the debut of the New Overhead Remote Controlled Weapons Station-Multi (ORCWS-M) as an additional family member of Elbit Systems' ORCWS product line, including the 7.62mm, 40mm AGL and both the unmanned turrets UT-25mm and the UT-30mm. The common denominator in all of Elbit's remote weapon systems is the ability to fully function the weapon while under cover and with hatches closed. Survivability is further increased by the optic sensors package installed in every weapon station, as well as the complimenting 360 degrees, situational awareness, laser detection systems and other sensors. Based on in-house electro-optics, stabilization and precision actuation technologies and over 30 years of experience in fire control systems and field-proven, the Company's range of weapon stations are among the most advanced in the market.



Entirely developed by Elbit Systems, the new ORCWS-M accommodates a variety of weapon calibers to include: 5.56mm, 7.62mm, 50 Cal. and 40 mm grenade launchers. These weapons are easily removable/installed in the cradle by the warfighters in the field. Using dual-axis stabilization, the weapon stations provide a high first round hit probability while on the move and engagement of both static and moving targets. Using both a day camera, a thermal night vision system, a laser range-finder and a search light assures high accuracy in all weather conditions and 24-hours a day operation. The electro-optics sensor package ensures target detection ("See First") at beyond the maximum effective range of enemy weapons and enables quick response to changing battle conditions.

This outstanding performance comes, with little increase in overall vehicle weight. The ORCWS-M is fully overhead, eliminating deck penetration. Gunner/Commander work stations are small in volume to save space in the [tied] cabin environment. The ORCWS-M is light weight and offer additional functions such as Automatic Target Tracking and manual backup operation in case of power loss, optical pod super elevation and traverse drives for ballistic compensation at the outer ranges of the weapons.

#### **About Elbit Systems**

Elbit Systems Ltd. is an international defense electronics company engaged in a wide range of defense-related programs throughout the world. The

Company, which includes Elbit Systems and its subsidiaries, operates in the areas of aerospace, land and naval systems, command, control, communications, computers, intelligence surveillance and reconnaissance ("C4ISR"), unmanned air vehicle (UAV) systems, advanced electro-optics, electro-optic space systems, EW suites, airborne warning systems, ELINT systems, data links and military communications systems and radios. The Company also focuses on the upgrading of existing military platforms and developing new technologies for defense, homeland security and commercial aviation applications.



#### **Defence Industry**

### **Oshkosh Delivers Two M-ATV Production Vehicles for Military Evaluation**

Oshkosh Corporation, announced that its Defense division delivered two production-representative MRAP All Terrain Vehicles (M-ATV) to the U.S. Army's Aberdeen Proving Ground in Maryland for military evaluation.

The mission-proven Oshkosh M-ATV meets the survivability and mobility requirements of the warfighter for Afghanistan. The U.S. Armed Services have an urgent need requirement for M-ATVs to be used in the harsh conditions of Afghanistan. The M-ATV contract has a potential award value of \$2 billion.

The Oshkosh M-ATV boasts commonality with the Department of Defense's fleet of Medium Tactical Vehicle Replacement (MTVR), Palletized Load System (PLS), Logistics Vehicle System Replacement (LVS) and current Mine Resistant Ambush Protected (MRAP) vehicles. The result is an Oshkosh vehicle that is mature, nondevelopmental and cost-effective for U.S. Armed Services, allowing for parts availability within the logistics system and probable, high readiness levels.

"The two Oshkosh M-ATVs delivered to Aberdeen offer unmatched survivability and off-road mobility, and incorporate existing military-tested components that make it the best value to the government and the taxpayer," said John Stoddart, Oshkosh Corporation executive vice president and president, Defense. "These vehicles need to operate in some of the most rugged terrains in the world. An accelerated yet effective durability test will prove the Oshkosh M-ATV to be the most reliable and mobile vehicle available for the military's urgent need to navigate the extreme terrain in Afghanistan."

To ensure superior protection and survivability, Oshkosh is partnered with Plasan North America to provide the Oshkosh M-ATV's armor system, which is in place on 5,000 current MRAP vehicles and the Armored Cab MTVRs and has saved lives in Iraq and Afghanistan. The vehicle also will feature Oshkosh's signature TAK-4 independent suspension system for exceptional off-road ride quality and durability to meet the essential mobility capability not available in the current MRAP fleet. Oshkosh pioneered all-wheel drive

for off-road mobility over 90 years ago and continues to offer the best off-road mobility for tactical wheeled vehicles.

Oshkosh offers low life-cycle costs, and the company's pre-contract investments have resulted in lowered risk and accelerated production readiness. In addition, Oshkosh Defense Aftermarket provides global logistics support and in-theater refurbishment services, which reduces vehicle shipping costs for servicing and allows for faster returns to the field.

Oshkosh Defense, a division of Oshkosh Corporation, is an industry-leading global designer and manufacturer of tactical military trucks and armored wheeled vehicles, delivering a full product line of conventional and hybrid vehicles, advanced armor options, proprietary suspensions and vehicles with payloads that can exceed 70 tons. Oshkosh Defense provides a global service and supply network including full life-cycle support and remanufacturing, and its vehicles are recognized the world over for superior performance, reliability and protection.



### Defence Industry

#### Navistar Delivers MXT-Based Units for MRAP All Terrain Vehicle Testing



WARRENVILLE, Ill. -- As one of the leading producers of Mine Resistant Ambush Protected (MRAP) vehicles, Navistar Defense, LLC will compete to supply the next generation of MRAPs with a vehicle based on its International MXT vehicle platform. The company delivered two vehicles today to undergo testing in the U.S. military's Mine Resistant Ambush Protected All Terrain Vehicle (M-ATV) program.

Navistar's MXT-based design provides the same production and delivery advantages offered by its original MRAP product, the International MaxxPro, but in a lighter and more mobile configuration. The company's M-ATV unit also incorporates the survivability protection expected from all of Navistar's MRAP vehicles.

Designed to navigate Afghanistan's rough terrain and perform in off-road conditions, Navistar's M-ATV unit utilizes a specially-designed, light-weight armor, which is incorporated into the survivability system. While the platform of the company's M-ATV vehicle varies from its MaxxPro MRAP, which is based on the International WorkStar platform, the smaller base allows Navistar's unit to weigh significantly less than its MaxxPro Dash - the lightest of the company's MRAP units and in service now in Afghanistan.

"We are proud to submit a vehicle based on our MXT

platform, which was designed to fill a gap that existed between smaller traditional armored 4x4's and larger transport vehicles," said Archie Massicotte, president, Navistar Defense. "By utilizing our existing commercial platform, we are able to rapidly advance our vehicle design and provide the military with a product that supports mission needs in Afghanistan."

Navistar's M-ATV unit is powered by a MaxxForce D 6.0 L V8 engine designed to maximize speed and payload capability. The company would also be able to support its M-ATV units in theater through its existing dealer and parts and support network, which includes locations in Afghanistan.

"Since our original MRAP award in May 2007, Navistar has delivered more than 6,000 MaxxPro vehicles to the military," said Massicotte. "We are also dedicated to the rapid modification of our vehicles to meet evolving mission needs. In less than 18 months, we were able to modify and deliver six MaxxPro MRAP variants."

While the company competes to provide the U.S. military with M-ATV vehicles specially designed for Afghanistan, Navistar is fielding a similar MXT-based vehicle with the United Kingdom for the same mission purpose in Afghanistan. As part of the United Kingdom's Tactical Support Vehicle (TSV) program, Navistar's vehicle will be called the Husky.

The company was also selected in October as one of nine finalists to compete to replace the U.K.'s light tactical wheeled vehicle fleet in the highly-competitive Operational Utility Vehicle Systems (OUVS) program. Navistar will provide MXT based vehicles for testing and trials in 2009 to replace a portion of the army's fleet, which includes Land Rover, Wolf, Reynolds Boughton RB-44 and Pinzgauer vehicles.

Navistar Defense is an affiliate of Navistar International Corporation, 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, and Workhorse brand chassis for motor homes and step vans.



### Defence Industry

#### Navistar Defense Launches New MRAP Utility Variant at AUSA Winter Symposium



WARRENVILLE, Ill. -- Navistar Defense, LLC unveiled a specially designed utility vehicle with Mine Resistant Ambush Protected (MRAP) level protection today at the Association of the United States Army (AUSA) Winter Symposium and Exposition.

The International® MaxxPro® Wrecker MRAP vehicle allows two- to three-man crews to retrieve damaged or mission-disabled vehicles and carry out other support missions. The new MaxxPro utility variant provides its crew with the same ballistics, mine and Improvised Explosive Device (IED) protection used on all MaxxPro MRAP vehicles currently in Iraq and Afghanistan.

“The Wrecker is another example of what Navistar is capable of configuring from one proven and reliable platform,” said Archie Massicotte, president, Navistar Defense. “The Navistar design maximizes the supportability and maintainability of these vehicles with a high degree of commonality of parts among all MaxxPro variants.”

In addition to the Wrecker, Navistar also has two new additional recovery MRAP utility variants, the MaxxPro Cargo and the MaxxPro Tractor. All three utility vehicles are built on the company’s flexible International® WorkStar® platform with a MaxxPro Dash cab. The vehicles are powered by MaxxForce™ D 9.3L I6 engines.

“Navistar is committed to the ongoing sustainment of its vehicles and our engineering and manufacturing expertise allow us to rapidly create, modify and deliver vehicles to meet new and evolving mission needs,” said Massicotte. “The MaxxPro Wrecker vehicle demonstrates how Navistar utilizes its network of nearly 1,200 engineers to evolve its vehicle offerings to help protect those operating various missions in theater.”

Since Navistar’s original MRAP contract in May 2007, the company has emerged as one of the leading providers of MRAP vehicles and has been contracted to produce 6,444 units. In the first 18 months of MaxxPro production, Navistar designed and produced six different variants, including the MaxxPro Plus and the lighter more mobile MaxxPro Dash. The company is also currently competing in the new MRAP All-Terrain Vehicle (M-ATV) program to produce the next generation of MRAP units for Afghanistan.

Navistar also supports its vehicles in theater through its global dealer and parts and support network. Navistar has provided more than 1.1 million parts pieces to support its military vehicles in theater and the company has more than 250 field support representatives in Iraq and Afghanistan to help ensure vehicles stay up and running helping to safely complete missions.

### Defence Industry

## LEGUAN - now also with two 14-metre bridges



Using an electronic control system, the LEGUAN armoured bridge-layer from Krauss-Maffei Wegmann GmbH & Co. KG (KMW) lays a bridge, load category MLC 80 and 26 metres in length, in just six minutes.

Even in the dark and with the hatches closed, the bridge system can be operated by a single person. In place of the 26-metre bridge, the LEGUAN can now for the first time also lay two bridges, each 14 metres in length, as a result of which the possible applications of the LEGUAN are considerably extended off road. At the same time the system with its 1,500 PS engine is extremely mobile, despite its weight of 62.6 tonnes (LEOPARD 2), so it meets all the requirements for international deployments, including anti-mine protection.

### International deployments for bridge system

KMW has already produced the LEGUAN bridge-layer on the basis of the LEOPARD 1 or LEOPARD 2 battle tank for the Norwegian, Greek, Belgian and Finnish armed forces. The bridge-laying system can, however, also be mounted on other used or new battle tank chassis. For example, it is also in use on chassis of the Polish PT91, the American M1 "Wolverine" and the M47/M60 in Spain. But the bridge can also be laid by wheeled vehicles, such as the MAN 8x8 and the 10x10 vehicle from Finnish company SISU. With the aid of additional pontoons, the LEGUAN can also be used to construct ferries of various load categories, and if necessary linked together to form floating bridges.

### Exhibitions

## Elbit Systems of America, LLC Unveils its Next Generation Tacter®-31D Rugged Dismountable Vehicular Computer at AUSA Winter 2009



FORTH WORTH, TEXAS -- Elbit Systems of America, LLC, a wholly owned subsidiary of Elbit Systems Ltd., introduces its next generation Tacter®-31D rugged dismountable vehicular computer platform and the new 10.4" rugged display at Elbit Systems of Americas booth #123 at the AUSA Winter 2009 exhibition in Ft. Lauderdale, Florida, February 25 – 27.

The Tacter®-31D offers a brilliant daylight-readable 10.4" display, powered by an Intel® Core 2 Duo processor and powered by hot-swappable Li-Ion Smart Batteries. The simple operation of a latch releases the

Tacter®-31D for dismounted use. When returning to the vehicle, the user simply places the Tacter®-31D tablet computer into the vehicle docking system and all interfaces attach for use. The Tacter®-31D is designed for comfortable use and ease of operation. Eight programmable function keys make it an ideal platform for custom applications. With a press of a button, the unit enters night mission mode and the screen dims to accommodate night vision goggles. The unit will be available with embedded military SAASM or commercial GPS, as well as a radio interface and wireless communication options.

The RD-104 rugged display is an addition to existing platforms or dismounted computer systems. By mounting the display and attaching the cables, the RD-104 becomes a daylight-readable touch-screen display interface for systems. This extends the usefulness of information on the computer system to other users, passengers in the vehicle or to remote computer operations. The RD-104 can be connected to a personal computer quickly and conveniently. The RD-104's features include a remote zeroize button, a power button, additional USB ports and other interfaces that broaden existing computer's utility into new missions.

"We are very excited about these two new computer solutions, said Jim English, Vice President of C4I Solutions for Elbit Systems of America. We believe the new Tacter®-31D is the most advanced vehicular mounted/dismounted military computer featuring a tablet configuration, thus enabling to share image or Command and Control information on a platform away from the work station. Being able to attach the Tacter®-31D to another station in the vehicle allows additional people to share the information and serves as an added value to combat echelons in the rapidly evolving world of the new modern digital battlefield."

#### **About Elbit Systems of America, LLC**



Elbit Systems of America is a leading provider of high performance products and system solutions focusing on the commercial aviation, defense, homeland security, and medical instrumentation markets. With facilities throughout the United States, Elbit Systems of America is dedicated to supporting those who contribute daily to the safety and security of the United States. Elbit Systems of America, LLC is wholly owned by Elbit Systems Ltd. (NASDAQ: ESLT), a global electronics company engaged in a wide range of programs for innovative defense and commercial applications.

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