Army Guide monthly

2 (89) February 2012

- Nexter Munitions : Multi-Annual Contract to supply large-caliber ammunition
- Saab provide new generation of training devices for US Army's Combat Vehicles
- BAE Systems and General Dynamics Team to Develop Affordable 'Smart' 81mm Mortar Round
- BAE Systems Teams With QinetiQ to Deliver Hybrid Electric Drive for US Army GCV Programme
- Patria and Volvo Group join forces to offer life-cycle support services for the Swedish Armed Forces
- ATL Mobile Broadband Solutions
- Hyundai Rotem Deploys Concurrent ImaGen Visual Servers for K-Series Tank Platoon Simulator Program
- Navistar Defense, Indigen Armor and SAIC Team for SOCOM Ground Mobility Vehicle Program
- BAE Systems Awarded $31 Million to Refurbish M113A2s for Iraq
- DARPA'S LS3 AlphaDog begins outdoor testing
- BAE Systems Wins $10.8 Million Order for Bradley Survivability Seats
- U.S. Marine Corps to Receive More Than 200 Oshkosh LVSRs
- U.S. Army Orders 1,100 Recon Scout XT Robots From ReconRobotics
- ACMAT unveils a new generation of armoured vehicles: the Bastion PATSAS
- iRobot Builds Leading Robotic Portfolio; Tallies 100th US Patent
- General Dynamics and BAE Systems Demonstrate 81mm Precision Mortar Round
- Oshkosh Defense to Unveil Upgraded FMTV at AUSA Winter
- Oshkosh Defense, U.S. Military Complete 3,500 M-ATV Underbody Kit Installations In-Theater in Seven Months

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Contracts

Nexter Munitions : Multi-Annual Contract to supply large-caliber ammunition

The French armament procurement agency Direction (DGA) has just awarded NEXTER Munitions a Multi-Annual Contract for the development, qualification and production of large-caliber ammunition.

The first part of this contract, worth €138m, comprises development and qualification of 155/52-calibre illumination and smoke shells; the supply of modular charges for CAESAR© artillery; the supply of explosive 120-mm cartridges for Leclerc Main Battle Tank and 105-mm practice cartridges for AMX 10 RCR armored vehicles; and resumed production of 100-mm cartridges for the French Navy.

This package contract covers the Armed Forces' requirements for large-caliber ammunition and gives France guarantees regarding the short and medium-term sustainability of the business of its supplier NEXTER Munitions for both development and production of large-caliber ammunition. In addition, the flow of production protects the fabric of suppliers, giving them visibility and sustainability.

The multi-annual nature of the supply contracts also ensures better price control in an extremely competitive global market.

Training And Simulators

Saab provide new generation of training devices for US Army's Combat Vehicles

Saab has been awarded a multi-year contract for the next generation of laser-based training systems for U.S. Army's armored combat vehicles. The order value is $ 17.2 million.

The indefinite delivery/indefinite quantity (ID/IQ) contract consists of this order and options that can be exercised over a time period of five years with a potential value of $ 90 million.

Saab's commercial off the shelf training system was selected after an extensive week long field evaluation at the Arizona Yuma Proving Grounds desert test site. The Combat Vehicle Tactical Engagement Simulation System (CVTESS) is a soldier-friendly wireless training device that is easily installed and maintained. CVTESS will provide a highly accurate laser based replication of the combat vehicles' weapons which will be used initially on all variants of the M-1 Abram's Tank and M-2 Bradley Fighting Vehicles.

The first Saab laser based simulators for the Abram tanks and Bradley Fighting Vehicles (BFV) were provided in 1988 for vehicle test bed testing as the armored vehicle were introduced. Saab fielded and continue to support the precision gunnery simulators for these vehicles with over 3,000 systems fielded since 1995. The new Combat Vehicle Tactical Engagement Simulator System (CVTESS) will replace most of these simulators still being used after fifteen years.

Saab Training USA, based in Orlando, FL, has supported the U.S. Armed Forces and Homeland Defense with range systems and military training products for more than thirty years. Lars Borgwing, President of Saab Training USA, said this new generation of simulators are designed to connect seamlessly with the modern instrumented training sites.

"We are currently fielding instrumentation systems at the Army homestations," Lars Borgwing said. "This system will enhance the training realism for the mounted soldiers immediately as the Army makes the shift into Unified Land Operations while supporting the Army Force Generation Model (ARFORGEN) as troops return from current combat operations."Saab North America provides a broad range of products, services and solutions ranging from military defence to homeland security to customers in the U.S. and Canada.

Defence Industry

BAE Systems and General Dynamics Team to Develop Affordable 'Smart' 81mm Mortar Round

GLASCOED, United Kingdom – BAE Systems and General Dynamics Ordnance and Tactical Systems have teamed to develop, demonstrate, and produce the 81mm Roll Controlled Guided Mortar (RCGM), an affordable 81mm precision mortar round. The companies have been maturing the guided mortar technology over the last 12 months and will be conducting tactical demonstrations early in 2012.

The teaming arrangement between General Dynamics Ordnance and Tactical Systems, a business unit of General Dynamics and BAE Systems' Munitions business, will leverage their respective strengths to provide a low-cost, highly affordable, precision mortar. The 81mm RCGM uses the current UK L41 round and US M734A1 fuze, but incorporates GPS guidance and General Dynamics' patented Roll Controlled Fixed Canard (RCFC) technology to provide a precision strike capability.

"RCGM will put, for the first time, a low-cost indirect precision system into the hands of the front-line soldier, dramatically increasing his combat effectiveness," said Ian Anderton, managing director of BAE Systems' Munitions business. "The system's increased accuracy will help bring effective fire on target quicker and the reduced number of rounds required for a typical mission will mean an approximate 30 percent reduction in logistics demands – an important consideration at the end of extended supply lines in theater."

Michael Wilson, President of General Dynamics Ordnance and Tactical Systems said, "Our teaming with BAE Systems will provide the infantry with a lightweight, portable, precision strike capability based on General Dynamics' innovative Roll Control Guided Mortar technology. By using existing warheads and fuzing with our low-cost control and guidance system, we can offer a truly affordable precision mortar round to

the US, UK and allies across the world."

Future Technologies

BAE Systems Teams With QinetiQ to Deliver Hybrid Electric Drive for US Army GCV Programme

QinetiQ is to provide its 'game-changing' E-X-Drive transmission as the key component of a hybrid electric drive propulsion system to the BAE Systems-Northrop Grumman team that was recently awarded a $449.9 million contract for the technology development phase of the U.S. Army's Ground Combat Vehicle (GCV) programme.

The E-X-Drive transmission for electric drive tracked vehicles marks a significant step forward from conventional hydro-mechanical transmissions in terms of efficiency, size, weight, reliability and flexibility. The E-X-Drive based system for GCV offers improved acceleration, agility, fuel efficiency and maintainability compared to the drive-trains of current combat vehicles. It also delivers electrical power for on-board vehicle systems, or as export power for stationary applications.

Importantly E-X-Drive enables fundamental changes in vehicle configuration as the engine and transmission do not have to be connected mechanically. This allows increased flexibility in the choice of power sources and their location, facilitating the easy introduction of fuel cells and advanced battery/energy storage technologies as they become available over the life-time of the vehicle.

"E-X-Drive is the key component of our hybrid electric drive propulsion system for the GCV having been proven by the U.S. Army's Future Combat System programme as the most mature and capable product available," commented Mark Signorelli, vice president and general manager of weapons systems at BAE Systems.

He added: "By combining our expertise in vehicle design with QinetiQ's game-changing technology we are able to deliver an affordable electric drive propulsion system that enables exceptional force protection and mobility in a lower weight vehicle. Our system has the added advantage of provisioning for growth in power requirements as new technologies are matured and integrated into the platform."

QinetiQ will deliver several transmissions during the 24-month technology development phase of the GCV programme. They will be used to confirm demanding performance and durability targets, demonstrating the technology's readiness for prototype builds during the engineering and manufacturing phase.

David Crane, Programme Director, Power Management at QinetiQ concluded: "We are delighted to be on the BAE Systems-Northrop Grumman team as the provider of E-X-Drive technology that is a key differentiator for the Ground Combat Vehicle and a significant innovation in armoured fighting vehicle design."

Defence Industry

Patria and Volvo Group join forces to offer life-cycle support services for the Swedish Armed Forces

Patria and Volvo Group have signed an exclusive teaming agreement to offer new concepts and partnerships related to comprehensive life-cycle support services for the Swedish Armed Forces' possibly upcoming needs.

Patria is in the process of delivering 113 AMV 8x8 armoured wheeled vehicles to the Swedish Army in addition to the about 200 Patria XA 6x6 vehicles already in service there. Volvo Group is a long-term supplier of vehicles to the Swedish Armed Forces and has an extensive network of service and maintenance facilities.

A good example and a forerunner of public and private partnerships in the defence support sector is Patria's subsidiary Millog in Finland. Millog has been already for three years a strategic partner of the Finnish Defence Forces providing life-cycle support services including a wide range of expert services, such as maintenance, repair, technical support, and system configuration management. The partnership arrangement set up for the Finnish Defence Forces' logistics operations has proven to be efficient and profitable for all stakeholders. This concept offers great opportunities for the public defence sector to reduce costs.

"To strengthen our Nordic cooperation and position we wanted to join forces with Volvo Group, which is a very significant partner for us. Together we are able to provide the most comprehensive services and partnerships for defence sector", says Jukka Holkeri, Chief Marketing Officer at Patria Group.

"Patria, with its experience from an extensive partnership with the Finnish Defence Forces, is a perfect partner for the Volvo Group. Together we can offer the best solutions to the Swedish Armed Forces", says Hekan Karlsson, responsible for governmental sales on Volvo Group's Executive Team.

Defence Industry

ATL Mobile Broadband Solutions

AT Electronic and Communication Systems is proud to announce the availability of the ATL Mobile Broadband Solutions.

Ideal for Mobile Command stations applications, systems are available to suit Military, Emergency

Services, Mining Exploration and Government agencies Eg Environment services and monitoring.

The ATL Mobile Broadband System provides rapid deployment of local mobile wireless communications supporting Voice, Data, Video with up to 100Mbits long haul link up to 90km to a base station. The system has been engineered using proven design techniques applicable for challenging rugged environment including Military versions.

The systems can be deployed on land vehicles such as commercial 4WDs, emergency response or tactical military vehicles as well as special purpose trailers.

Local Networks can be configured as TDM, IP, WiFi or WiMAX with Pneumatic or Windup Masts up to 20m. Advanced options include automatic link establishment with steerable antenna and network encryption for sensitive applications.

AT Electronic and Communication International is able to custom design a solution with all integration components necessary for your application.

For further technical information and system diagrams showing sample applications please visit this link: http://digital-microwave-radio.at-communication.com/en/at/atl_mobile_broadband_solutions.html

Training And Simulators

Hyundai Rotem Deploys Concurrent ImaGen Visual Servers for K-Series Tank Platoon Simulator Program

Concurrent Real-Time, a leading provider of real-time Linux solutions for mission-critical applications, announced Feb. 7 that Hyundai Rotem, a worldwide leader in ground weapon systems, has deployed 176 ImaGen visual servers powered by the RedHawk Linux real-time operating system.

The ImaGen servers will be used in the Phase I deployment of image generators for the K-Series Tank Platoon Simulator Program. The full deployment is expected to include approximately 350 ImaGen servers over one year.

Hyundai Rotem is the main contractor of the K-Series Tank Platoon Simulator Program, which is the first virtual tactical tank simulation trainer developed under the Defense R&D Program of Korea Defense Acquisition Program Administration. Hyundai Rotem has played a critical role in strengthening South Korean defenses by developing the K1/K1A1 tank and its family of vehicles.

KCEI Co., Ltd., a value-added reseller based in South Korea, helped orchestrate the deal for Concurrent. "We initially selected Concurrent during the program's development phase in March 2008 when we evaluated multiple PC-image generation systems," said Hyun Joon Ko, president, KCEI Co. Ltd. "We found Concurrent's ImaGen to be the best technology and value available on the market. We chose Concurrent for the deployment phase on the strength of their latest state-of-the-art IG platforms and their outstanding technical support."

Each tank simulator's ImaGen configuration will include eight channels rendered by award-winning Presagis Vega Prime visualization software, utilizing the latest NVIDIA graphics technology. The integrated solution based on RedHawk Linux real-time OS and Vega Prime imaging software offers a high-fidelity, commercial-off-the-shelf PC image generation system with unprecedented jitter-free performance.

"Hyundai Rotem's selection of Concurrent for the K-Series Tank Platoon Simulator platform, through our partner KCEI, demonstrates our ability to provide and support state-of-the-art commercial-off-the-shelf, Linux-based visualization solutions," said Ken Jackson, Concurrent vice president, Real-Time. "KCEI is a respected supplier of PC-based visualization solutions. Our win will extend Concurrent's real-time visualization capabilities in South Korea and surrounding markets served by KCEI."

KCEI also has a service contract with Hyundai Rotem to support the K-Series Tank Platoon Simulator Program, with Concurrent providing second tier support to KCEI for Concurrent's ImaGen visual servers.

More on ImaGen Visual Servers

Concurrent's ImaGen visual server is a scalable, COTS-based PC-IG family designed to serve a wide variety of imaging needs. Powered by Concurrent's RedHawk real-time Linux, the latest graphics technology and fully integrated with visual rendering software from leading providers, Concurrent delivers reliable, high-fidelity, high-performance COTS visuals with outstanding value. ImaGen is the PC-IG solution choice of customers worldwide, including Lockheed Martin, Eurocopter, Boeing, Redstone Arsenal, Hyundai Rotem and Saab Aerosystems. For more information on ImaGen Visual Servers, view the product overview.

Defence Industry

Navistar Defense, Indigen Armor and SAIC Team for SOCOM Ground Mobility Vehicle Program

Lisle, Ill. -- Navistar Defense, LLC, Indigen Armor and SAIC announced today they will team for the upcoming U.S. Special Operations Command (SOCOM) Ground Mobility Vehicle 1.1 (GMV 1.1) program.

The GMV 1.1 program requires a highly mobile, roll-off mission-ready platform that is transportable on a CH-47 helicopter. To support Special Operations (Specops) missions, each vehicle will be integrated with a full government furnished Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) suite.

“We are eager to team with Indigen Armor and SAIC to provide U.S. Special Operations forces with an off-road truck that possesses unprecedented mobility and is designed to be an affordable solution throughout its lifecycle,” said Archie Massicotte, president of Navistar Defense. “Navistar brings world-class truck and engine

integration capabilities to the table and with our partners we will be able to provide quick-to-market products to support the needs of Special Operators."

"As a company founded by special operations personnel to design vehicles for special operations personnel, Indigen Armor is excited to add to the subject matter expertise of Navistar and SAIC to provide the finest solution for SOCOM's GMV 1.1 requirement," said John Choate, president of Indigen Armor and former Navy SEAL. "This team establishes a robust alliance that combines proven expertise in meeting Specops mobility requirements, automotive design and manufacturing, C4ISR integration, logistics support and contract management."

Under the teaming agreements, Navistar will serve as the prime contractor for the GMV 1.1 program. Navistar and Indigen Armor will combine their automotive and Special Operations expertise with SAIC's skill in C4ISR technologies and its ability to field and provide integrated logistics support.

"This team understands SOCOM's mission requirements and has worked well together supporting them in recent years," said Glenn San Giacomo, SAIC senior vice president and business unit general manager. "These experiences will help us as we design, field and sustain an exceptional vehicle that has full life-cycle efficiencies designed in from the start."

The program currently calls for the production of about 200 units per year for up to five years. A request for proposals is expected in late February 2012, with production awards expected in early January 2014.

Defence Industry

BAE Systems Awarded $31 Million to Refurbish M113A2s for Iraq

ANNISTON, Alabama -- BAE Systems in partnership with the Anniston Army Depot (ANAD) are refurbishing 440 M113A2 armored personnel carriers for Iraq through a foreign military sales contract worth more than $31 million.

"The M113 refurbishment will give the Iraqi Army a capability which is relevant to a variety of threat environments," said Joe McCarthy, vice president and general manager of Combat Vehicles at BAE Systems. "We have been exporting and doing upgrade work on M113s for decades. This new work builds upon our great partnership with Anniston Army Depot."

The refurbishment of the M113 vehicles includes replacing old and damaged equipment with updated components and restoring the vehicles to fully mission capable condition. Work on the M113 refurbishment will be completed by April 2012 and is being performed at the company's Anniston, Alabama facility by the existing workforce. ANAD is assisting with part of the refurbishment work.

"BAE Systems and Anniston Army Depot have the longest standing Public Private Partnership in the Army," said U.S. Representative Mike Rogers (R-AL), "I'm proud of the work that both do and in this tough economy, it's great to see the leaders of industry and the Army continue to partner and keep our military strong while providing the resources necessary for both the warfighters and our allies to help defend our freedoms."

According to the ANAD Business Management Office, "the M113 family of vehicle partnering program provides a great example of how to maintain and strengthen the defense industrial base. It utilizes the strengths of both the organic and industrial base to provide the best product for both the war fighters and our allies. We look forward to continuing to work on future efforts."

Under a separate effort, BAE Systems will provide materials to ANAD to refurbish 586 M113A2s also bound for Iraq. In addition, BAE Systems is also providing field service support and equipment trainers to help with fielding the equipment to the Iraqi Army.

The M113 is part of the largest family of armored tracked vehicles in the world and includes more than 80,000 vehicles worldwide with 40 variants. It can transport 12 troops plus a driver and is capable of amphibious operation, extended cross-country travel over rough terrain and high-speed operation on improved roads and highways.

This award builds upon earlier work BAE Systems has completed in support of foreign military sales to Iraq. Under separate contracts, BAE Systems has delivered 618 Iraqi Light Armored Vehicles and eight M88A2 Heavy Recovery Vehicles to the U.S. Government in support of Iraq's Armed Forces. BAE Systems is also providing training and field service representatives to support Iraq's fielding of the M88A2s. Total orders for Iraq security assistance contracts and work directives in 2011 totalled more than $60 million.

Robots

DARPA'S LS3 AlphaDog begins outdoor testing

The US Defense Advanced Research Project Agency (DARPA) has conducted the first outdoor testing of

its newly developed prototype semi-autonomous four-legged robot, the Legged Squad Support System (LS3), designed to carry heavy loads for dismounted troops in the field.

During the exercise the robot, dubbed AlphaDog, demonstrated its ability to follow the soldier using its sensors to distinguish between trees, rocks, terrain obstacles and humans.

Based on DARPA's previously designed four-legged robot called BigDog, the LS3 is smarter and stronger than its predecessor, which was able to carry 100lbs and also served as an auxiliary power source that soldiers can use to recharge batteries for handheld devices during patrols.

The robot will now undergo an 18 month platform-refinement test cycle, beginning in July 2012 to ensure its ability to support dismounted squads of warfighters before it is deployed in a field exercise with the Army and US Marines Corps.

The LS3 will continue to be refined during this period and will ultimately be made capable of carrying 400lbs of squad gear a distance of 20 miles within 24 hours without refuelling.

The robot's vision sensors will be tested and refined to ensure that it can properly detect obstacles and autonomously correct its course as required and hearing sensors will be added to help LS3 follow verbal commands from soldiers.

DARPA programme manager Army lieutenant colonel, Joe Hitt, said: "LS3 seeks to have the responsiveness of a trained animal and the carrying capacity of a mule."

The highly mobile LS3 was under joint development with Boston Dynamics since 2010, and is being built to reduce the load on soldiers which has become a major point of emphasis for defence research and development due to negative impact it creates on battle readiness.

Hitt added: "If successful, this could provide real value to a squad while addressing the military's concern for unburdening troops."

Contracts

BAE Systems Wins $10.8 Million Order for Bradley Survivability Seats

PHOENIX, Arizona -- BAE Systems has received a $10.8 million award from SSI Technology, Inc. to provide Advanced Survivability Seats for Bradley Fighting Vehicles used by the U.S. Army.

The specially designed seats – called Survivor Post Mount 1000 and Survivor Modular Troop 3000 – include an energy-absorbing technology to protect soldiers and other warfighters.

“This technology helps decrease the potential for spinal injuries that may result from the shock of a blast,” said Frank Crispino, director of vehicle protection programs at BAE Systems Support Solutions. “The seat and restraint system are integral components of the overall vehicle survivability capability to protect occupants from blasts and other threats.”

The order builds upon BAE Systems’ strong history of performance, as the company has provided more than 1,900 Bradley seats since 2009. The latest upgrades are in association with the Bradley Advanced Survivability Seats – Driver program and will be applied to a portion of the Army’s Bradley Urban Survivability Kit program.

The work will be performed at BAE Systems’ facility in Phoenix, Ariz., with deliveries beginning this May and concluding in June 2013. There are approximately 450 employees in Phoenix, where the company has been providing occupant safety products for more than 30 years.

As a leader in survivability systems for land, air and naval applications, BAE Systems is developing lifesaving products to protect occupants, including crashworthy seating systems; ceramic and transparent armor technologies; integrated vehicle armor systems; vehicle and aircraft survivability components and accessories; as well as soldier protection equipment used around the world.

BAE Systems Support Solutions, based in Rockville, Md., provides a range of products and services to meet needs in readiness and sustainment and operational support across the land, aviation, maritime and C4ISR domains, supporting the U.S. Department of Defense and federal agencies. Support Solutions is also a leading non-nuclear ship repair, modernization and conversion company, serving the U.S. Navy and other maritime customers.

Defence Industry

U.S. Marine Corps to Receive More Than 200 Oshkosh LVSRs

OSHKOSH, Wis. -- Oshkosh Defense, a division of Oshkosh Corporation, will deliver more than 140 Logistics Vehicle System Replacement (LVSR) cargo trucks and nearly 70 LVSR tractors for the U.S. Marine Corps following an order from the U.S. Marine Corps Systems Command.

The LVSR was first fielded in Afghanistan in 2009 and has quickly proven itself as the Marines’ new heavy-payload platform, delivering improvements in mobility, protection and performance.

“Our ongoing commitment to internal innovation at Oshkosh allows us to design, upgrade and sustain highly advanced vehicles like the LVSR and ensure military fleets remain in sync with evolving challenges in theater,” said John Bryant, vice president and general

manager of Joint and Marine Corps Programs for Oshkosh Defense. “The LVSR’s advanced design allows it to accept protection upgrades and perform missions that are above and beyond what the original vehicle requirements called for.”

The LVSR cargo variant is used in even the most challenging terrain to transport a wide range of supplies and materials, including ammunition, fuel containers, bridging equipment, flatracks and ISO containers. The LVSR tractor variant is designed to haul combat vehicles, semi-trailers and other equipment. It has a fifth-wheel vertical-loading capacity of 25.3 tons and a recovery winch with a 30-ton capacity.

The LVSR is produced in three variants – cargo, wrecker and tractor – and is used in tandem with the medium-payload, Oshkosh-built Medium Tactical Vehicle Replacement (MTVR). The LVSR is equipped with the Oshkosh Command Zone™ embedded diagnostics system to provide real-time performance feedback on major vehicle systems, including the engine, transmission and brakes. The vehicle also uses the company’s patented TAK-4® independent suspension system for off-road mobility in severe landscapes.

The order is valued at more than $94 million and work is expected to be completed in September 2013. Oshkosh to date has received orders for more than 2,000 LVSRs.

Robots

U.S. Army Orders 1,100 Recon Scout XT Robots From ReconRobotics

EDINA, Minn. -- ReconRobotics, Inc. announced Feb. 15 that it has been awarded a $13.9 million contract for 1,100 Recon Scout XT micro-robot kits from the U.S. Army Contracting Command on behalf of the U.S. Army Rapid Equipping Force.

This is the largest order in the company’s history and, in terms of the number of units, it is also the largest micro-robot order ever issued by the U.S. Army. In addition, the company announced two accessory orders totaling nearly $1 million from the Rapid Equipping Force. ReconRobotics plans to complete deliveries on these orders by May 31, 2012.

"We are honored that the U.S. Army has once again chosen our Recon Scout XT system for their dismounted troops,” said Ernest Langdon, Director of Military Programs for ReconRobotics. "Although these 1.2-lb robots are exceptionally small, they will play a big role in providing our warfighters with increased situational awareness and standoff distance as they conduct operations in active combat theaters."

Over the last six months, ReconRobotics has received U.S. military orders for 1,800 Recon Scout XT kits. In addition, more than 350 law enforcement agencies, worldwide, rely on Recon Scout robots to conduct reconnaissance during high-risk tactical operations. Several characteristics make the Recon Scout XT ideally suited to military and police operations: the weight of the entire XT system (robot and handheld Operator Control Unit) is just 3 pounds (1.3kg), and the robot can be deployed in five seconds and thrown up to 120 feet (36m). The XT is also exceptionally quiet and is equipped with an infrared optical system that allows the operator to explore an environment in complete darkness.

Defence Industry

ACMAT unveils a new generation of armoured vehicles: the Bastion PATSAS

Open-shell, V-shaped and armoured 4WD, this tactical off-roader is designed for deep patrol fast attack and close combat operations.

Based on 60 years of military experience in the rugged and hostile environment of Africa and Middle East, the new BASTION PATSAS is specifically designed to meet the high levels of mobility, armour protection, payload and survivability in the most extreme driving conditions.

Open-top, this special feature allows the deployment of heavy weapon and missile platforms, the fitting of reconnaissance, surveillance and target acquisition systems as well as performing check-point mission and any special operations. The features of the BASTION PATSAS combine the famous rigid all-wheeled steel chassis and field-proven technologies to challenge all the theatres of operations.

Close combat operations:

- Machine Gun Stations
- Fire Support Systems
- Self-protection systems

Ballistic protection up to level 3:

- Standard NATO STANAG 4569.

Anti-mine protection level 2:

- Standard NATO STANAG 4569, Run Flat tyres.

Wide mobility:

- 1000-km cruising range without refueling
- Extreme terrain and survivability
- Full time all-wheel drive

- Ground clearance 0.60 m,
- Extreme environment -32°C to +55°C

Driving force:

- Powerful 215 hp / 815 Nm
- Gear box 5-speed auto or 6-speed manual
- Central Tyre Inflation System

The vehicle is also available in the version Armoured Personnel Carrier.

With the BASTION PATSAS, the ALTV Open cab series Torpedo and the VLRA Commando, ACMAT provides a unique and comprehensive solution to operating autonomously with a maximum degree of tactical mobility and offensive power to Special Operations Forces units.

Robots

iRobot Builds Leading Robotic Portfolio; Tallies 100th US Patent

iRobot Corp., a leader in delivering robotic technology-based solutions, has been awarded its 100th United States patent, an important attainment reflecting the company's ongoing attention to building strategic intellectual property.

The 100th U.S. patent (U.S. 8,108,092) protects robotic 'retrotraverse' technology, which gives the iRobot 510 PackBot® with User Assist Package (UAP) the unique capability to autonomously return to its operator should wireless communications fail. Retrotraverse technology, pioneered to keep troops out of harm's way, is applicable to networked and wireless robots in military, commercial, healthcare and household applications. Additional pending U.S. and international patent applications are expected to protect other critical semi-autonomous capabilities provided by the UAP.

"iRobot has made significant investments to protect its intellectual property. We have been both strategic and aggressive in filing U.S. and international patent applications relating to key product features and innovations, and we have entered into partnerships that allow for the cross-licensing of product portfolios," said Colin Angle, chairman and chief executive officer of iRobot. "These steps are important in maintaining our position as the leading publicly traded pure-play robotics company and in sustaining a long-term competitive advantage."

Defence Industry

General Dynamics and BAE Systems Demonstrate 81mm Precision Mortar Round

BOTHELL, Wash. -- General Dynamics Ordnance and Tactical Systems, a business unit of General Dynamics, and BAE Systems have successfully demonstrated a tactical version of their 81mm Roll Control Guided Mortar (RCGM) at Yuma Proving Grounds, Ariz., in January.

Sixteen rounds were tested in total, all of which guided to within an average miss distance of approximately seven meters from the target at ranges from 980 meters to 4,000 meters.

The testing was conducted under a Cooperative Research and Development Agreement (CRADA) with the U.S. Army Armament Research Development and Engineering Center (ARDEC), Picatinny Arsenal, N.J.

The tactical configuration of the RCGM used the current UK L41 high explosive mortar round and a six-increment propulsion charge system produced by BAE Systems. The guidance package developed by General Dynamics consists of a GPS receiver, standard M734A1 multi-option fuze components, and the company's patented Roll-Controlled Fixed Canard (RCFC) control system.

Daniel Paul, vice president and general manager of Precision Systems for General Dynamics Ordnance and Tactical Systems, said: "Our partnership with BAE Systems has resulted in the near flawless development and demonstration of an 81mm precision mortar. This success is the result of a great team including the U.S. Army ARDEC and Yuma Proving Grounds test community. The telemetry and high-speed video coverage from the tests demonstrate, without a question, the maturity and capability of our 81mm RCGM. We are now in a position to offer the U.S., UK and other allies an affordable guided 81mm precision mortar capability in the very near term."

"The BAE Systems 81mm mortar system is in service with more than 40 countries worldwide, including the U.S. and UK, so we see a large potential market for this low-cost precision round which can be fired from our mortar tube without any modification," said Ian Anderton, managing director of BAE Systems Global Combat Systems Munitions.

Exhibitions

Oshkosh Defense to Unveil Upgraded FMTV at AUSA Winter

OSHKOSH, Wis. -- Oshkosh Defense, a division of Oshkosh Corporation (NYSE:OSK), is continuing its commitment to further improve protection and mobility for Warfighters on the changing battlefield with new enhancements for the U.S. Army and National Guard's Family of Medium Tactical Vehicles (FMTV). The result for soldiers is better underbody protection and noticeably improved vehicle performance and ride quality on rough terrain.

Named the FMTV Enhanced Protection & Mobility Demonstrator (EPMD), the prototype vehicle utilizes the Oshkosh TAK-4® independent suspension system and a custom-fitted Oshkosh Underbody Improvement Kit (UIK) for previously unrealized levels of protection and mobility. The FMTV EPMD will be unveiled at the AUSA Winter Symposium & Exposition, Feb. 23-25 in Fort Lauderdale, Fla.

"We're drawing on two Oshkosh Defense core competencies – survivability and off-road mobility – to give the FMTV platform improved capabilities on the battlefield against evolving threats and severe terrain," said Mike Ivy, vice president and general manager of Army Programs for Oshkosh Defense. "Oshkosh has had great success delivering a high-quality FMTV fleet for our customer at a reduced cost. These upgrades build on that success and give soldiers a better protected, more mobile family of vehicles."

The FMTV EPMD uses an Oshkosh-designed UIK to provide protection beyond the platform's Long-Term Armor Strategy-compliant armor suite. Oshkosh is in the process of delivering more than 8,000 MRAP All-Terrain Vehicle (M-ATV) UIKs, which are protecting Warfighters in Afghanistan today, as well as more than 400 UIKs for the Army's Heavy Expanded Mobility Tactical Truck (HEMTT) A4. Oshkosh UIKs are designed for light, medium, heavy and MRAP vehicles in the ongoing battle against increasingly dangerous IEDs and roadside bombs.

The Oshkosh TAK-4 system, used on more than 20,000 medium, heavy and MRAP vehicles, delivers several improvements to the FMTV's current configuration, including:

- Increasing the off-road profile capability from 30 percent to 70 percent
- Delivering 16 inches of front wheel travel – a 120 percent improvement
- Improving ride quality on severe terrain, allowing soldiers to arrive more refreshed for their missions
- Increasing the maximum off-road speed by nearly 20 percent

Oshkosh to date has conducted more than 6,000 miles of independent durability testing on the FMTV EPMD's subsystems to prove their maturity and readiness for the battlefield.

Oshkosh representatives will be available at booth #3324 in the outdoor display area at AUSA Winter to discuss the FMTV enhancements as well as other Oshkosh vehicles and technologies.

Defence Industry

Oshkosh Defense, U.S. Military Complete 3,500 M-ATV Underbody Kit Installations In-Theater in Seven Months

OSHKOSH, Wis. -- Oshkosh Defense, a division of Oshkosh Corporation (NYSE:OSK), and the U.S. military have reached a significant milestone in the ongoing battle against improvised explosive devices (IED) in Afghanistan, having recently completed the in-theater installation of the 3,500th Oshkosh MRAP All-Terrain Vehicle (M-ATV) Underbody Improvement Kit (UIK) in less than seven months to give Warfighters new levels of protection against the threats.

In response to larger IEDs, Oshkosh worked closely with the MRAP Joint Program Office (JPO) to design and deliver the first M-ATV UIK in less than 30 days. The kits increase the M-ATV's protection level beyond the initial requirements and are part of Oshkosh's comprehensive strategy to help keep Warfighters safer on the battlefield without limiting mission-critical off-road mobility.

"Oshkosh Defense uses a modular approach to vehicle design, allowing the M-ATV and several other fielded platforms to accept a wide range of upgrades in-theater as threats evolve," said John Bryant, vice president and general manager of Joint and Marine Corps Programs for Oshkosh Defense. "We design UIKs and test them thoroughly to meet the government's stringent survivability requirements. Our Field Service Representatives then go wherever needed, including in-theater, to install the kits in rapid fashion."

In addition to the M-ATV, Oshkosh produces UIKs to enhance protection for other vehicle platforms. The U.S. Army to date has ordered more than 400 UIKs, also known as C-Kit armor, for the Oshkosh Heavy Expanded Mobility Tactical Truck (HEMTT) A4.

Oshkosh is also developing and conducting independent testing of UIK enhancements for its wide range of light, medium and heavy tactical wheeled

vehicle platforms, including the Army's Family of Medium Tactical Vehicles (FMTV).

Urgent In-Theater Installation

The MRAP JPO established 10 UIK installation sites in Afghanistan, while Oshkosh designed the lean process flow and specified, procured, packaged and delivered the tooling required to support the installations. Working together, the MRAP JPO's universal workforce and Oshkosh installed the first 3,500 UIKs in less than seven months. Oshkosh to date has received orders for more than 8,000 M-ATV UIKs and continues to install the kits in-theater.

The Oshkosh UIKs take advantage of the M-ATV's flexible design and industry-leading suspension system to accept additional armor. Similar to the M-ATV's bolt-on armor, UIKs can be installed in-theater without the need for welding or major fabrication.

U.S. military technicians in Afghanistan have also installed 400 UIKs for a total of more than 3,900 M-ATVs with greater protection levels in-theater to date. Additionally, Oshkosh delivered more than 500 new M-ATVs with factory-installed UIKs.

Defence Industry

New Wide-Field Thermal Camera Systems from DRS Technologies Helps Keep Military Vehicles on the Road – And Troops Safer

PARSIPPANY, NJ -- DRS Technologies, Inc. a Finmeccanica Company announced its Reconnaissance, Surveillance and Target Acquisition (RSTA) Group has developed a new type of wide-angle thermal camera that can help keep military vehicles from accidently dropping off treacherous mountain roads in the war zone.

Typically, troops who drive Mine Resistant Ambush Protected (MRAP) vehicles and other combat vehicles must navigate them close to steep cliffs and other hazards. These vehicles are currently equipped with a Driver's Vision Enhancer (DVE) that offers a thermal video image with a narrow field of view that is 40є wide x 30є vertically.

Capitalizing off of the technology and lessons learned from the DVE, RSTA has developed a system that "stitches" together images to create a 107є x 30є field of view.

The new system, DVE Wide, lets the driver electronically pan through the full 107є to see both sides of the road ahead. It also adds wheel track indicators to the video image so the driver can clearly identify any potential obstacles and see where road surfaces drop off. The thermal cameras create an image by detecting infrared waves (heat), rather than light waves; so they produce sharp, high-resolution images in the dark of night and through dust, haze, sand, smoke and light fog.

"DVE Wide provides Warfighters with the perspective they need to remain safe and conduct operations in a highly efficient way," says RSTA President Terry Murphy. "No longer must a spotter dismount from the vehicle and become exposed to enemy fire to guide the vehicle down a dangerous road, and no longer will these vehicles be likely to roll off the unseen edges of roads, bridges or cliffs. With DVE Wide, the driver maintains a full view of the conditions ahead and beside the vehicle. We believe that DVE Wide will save many lives and will help America bring more of its troops home safely in the future."

DVE Wide is simply a one-for-one sensor replacement to the existing DVE system. This backwards compatibility makes DVE Wide easy to deploy and install. It operates with the existing display control monitor and cables, so the military does not need to re-outfit its vehicles with costly upgrades and installation kit modifications.

With more than 55,000 DVEs from RSTA in the field, the safety upgrade to DVE Wide is a low cost effort guaranteed to increase the Warfighter's force protection and operational capability.

Exhibitions

MillenWorks' New, Rapidly Deployable Battery Management System Optimizes Battery Performance

San Diego, CA -- MillenWorks, a strategic business of Textron Marine & Land Systems, an operating unit of Textron Systems, a Textron Inc. company, introduced its new Battery Management System (BMS) at the SAE 2012 Hybrid Vehicle Technologies Symposium in San Diego.

Able to accommodate various Lithium Ion battery chemistries, MillenWorks' BMS can be rapidly deployed to meet customers' specific high voltage energy storage system requirements at the prototype level.

MillenWorks is exhibiting its BMS capabilities at Booth 50 in the Town and Country Resort & Conference Center during the two-day SAE symposium, attended by automotive original equipment manufacturers (OEMs) and energy storage providers.

Ideal for electric vehicles, hybrid electric vehicles, or grid storage systems, the MillenWorks BMS monitors the performance of cells within a battery to achieve optimum performance and life while safely managing and operating the system. This is accomplished by actively integrating multiple data points, including cell voltages, temperature and current, into advanced

algorithms that are tailored to cell chemistry and application.

"This system utilizes our decades of systems integration experience in extreme off-road environments to provide a BMS integrated with a robust hardware platform required by today's emerging, mid-size and large vehicle OEMs and battery cell manufacturers," said MillenWorks Director of Commercial OEM Michael Reagan. "As more customers in the United States and internationally pursue integrating electric drive powertrains in their vehicles, MillenWorks is equipped to deliver optimal, scalable solutions for their energy storage needs."

MillenWorks' BMS also is highly customizable to the various profiles of customer cells. The flexible architecture utilizes a master/slave topography that accommodates up to 192 series cells offering a scalable solution for low voltage packs through systems operating in the 700 volt range. The system offers real-time monitoring of key battery parameters such as state of charge, state of health and state of life.

MillenWorks has developed multiple electric drivetrain and energy storage systems for commercial OEMs and defense customers during more than 30 years in business. The company is adept at implementing battery management systems for customers using a myriad of chemistries including lead acid, nickel cadmium, nickel metal hydride, and various lithium ion chemistries.

Exhibitions

Tawazun to reveal UAE`s emerging manufacturing and technology capabilities at International Armoured Vehicles□

Abu Dhabi -- Tawazun Holding, the Abu Dhabi-based strategic investment firm, is the Lead Sponsor of this year's 11th Annual International Armoured Vehicles (IAV) conference and exhibition being held at FIVE, Farnborough, UK from 20th to 23rd Feb 2012.

A wholly owned subsidiary of the UAE's Offset Program Bureau, Tawazun is engaged in the long-term development of Abu Dhabi's industrial manufacturing and technology capabilities, including knowledge transfer, with a specific focus on defence, defence manufacturing and manufacturing technology.

Established in 2007, the firm's mission is to develop profitable ventures through industrial partnerships and strategic investments that add to Abu Dhabi's industrial manufacturing layer and contribute to the balancing of the UAE economy.

Tawazun's delegation to the IAV is headed by H.E Saif Mohamed Al Hajeri, Chief Executive Officer.

Hamad Al Neyadi, Tawazun's Chief Strategic Officer of Tawazun will be speaking at IAV (on Main Conference Day 2, 22nd Feb) on the emerging manufacturing and technology capabilities in the Middle East.

Tawazun's focused but extensive portfolio includes Nimr Automotive, a specialised vehicle manufacturer, and the firm will be showcasing Nimr at IAV. Indeed, Nimr will be the first UAE company ever to appear at the event.

Also Abu-Dhabi-based, Nimr produces a range of high-mobility, multi-terrain, multi-purpose vehicles designed to address the varied needs of international Armed Forces and security organisations. These customisable, interoperable platforms, offering transport solutions for a wide range of combat and non-combat scenarios can be employed in many roles, including as armament or personnel carriers, logistics vehicles, ambulances, and mobile Command and Control centres.

Bringing together senior military and industry experts, IAV, the world's largest meeting place dedicated to the armoured vehicles community, provides opportunities for its visitors to gain expert insights on armoured vehicle trends, global procurement activity and lessons learned from the battlefield, as well as conduct business with the world's leading vehicle, system and component manufacturers and smaller specialist suppliers.

Defence Industry

Lazika IFV has been unveiled at the Vasiani, Georgia

Lazika Tracked Infantry Combat Vehicle has been unveiled at the Vasiani military firing-range. The Georgian President and Defence Minister drove a few kilometers in a new armored vehicle along with military servicemen.

Lazika is a Tracked Infantry Combat Vehicle with a combined armor providing protection from 14,5mm caliber armor-penetrating bullets. Lazika has a remote control weapon module, equipped with fire control system, with 23 mm caliber cannon and 7, 62 mm caliber

machine gun mounted on. The fighting vehicle ensures detection and identification of a target (at a distance) and fire control in any kind of weather conditions with day-night and thermal vision cameras. The maximum speed is 70 km/h.

Lazika is the number two armored vehicle after Didgori although it is different in terms of purpose and characteristics. Unlike Didgori which is patrolling, light armored, reconnaissance vehicle, Lazika, which has been presented today, is heavy armored, mobile and offensive fighting vehicle that is not produced by many states. I should say that we have seriously worked in this area and coping with this challenge indicates that we can further develop this direction," said Defence Minister Bacho Akhalaia.

"When manufacturing Lazika, its producers took into account experience of international military industry. Lazika is the second Georgian armored combat vehicle which was produced on the basis of Military Scientific-Technical Center "Delta" subordinate to the Ministry of Defence of Georgia. The first vehicle Didgori was presented to the public on the Military parade on May 26 of 2011.

Robots

Four Light Robots Put Through Paces at Fort Benning

FORT BENNING, Ga. -- Infantrymen and engineers steered four small robots around the buildings and terrain at the McKenna Urban Operations Complex last week to get a better idea how they might help Soldiers in recon missions and the detection of improvised explosive devices.

It was part of the Ultra Light Reconnaissance Robot limited objective experiment sponsored by the Joint Improvised Explosive Device Defeat Organization. Fort Benning's Maneuver Battle Lab conducted the assessment, which began Feb. 13 and ended Friday.

Key players also included the Robotic Systems Joint Products Office; Maneuver Support Center of Excellence from Fort Leonard Wood, Mo.; Maneuver Center of Excellence Counter Improvised Explosive Device training team and Marine Corps Warfighting Laboratory.

Project officials said robot weight, size and power requirements must be measured against its capabilities and limitations in defeating IED threats. Finding the right balance was a major focus area in the experiment.

Army and Marine small units engaged in maneuver, movement and protection operations don't have the responsive capability to detect, identify and monitor IED and other threats in confined spaces such as culverts at standoff distances, officials said. If a possible IED threat is detected but can't be confirmed because of its camouflaged location, small units must call on limited engineer and explosive ordnance disposal resources, or a Soldier has to get close enough to visually confirm the threat -- a time-consuming and dangerous process.

"The point is to keep Soldiers out of harm's way and danger -- and put a robot there instead," said Maj. Joseph Pruitt of the Maneuver Support Battle Lab from Fort Leonard Wood. "Ideally, we want a robot that weighs nothing and does everything."

The candidate robots -- Dragon Runner 10, Armadillo, 110 First Look and Recon Scout -- range from 11 to 1.2 pounds. All are designed to be thrown.

Each was put through its paces in a series of different missions carried out by eight Soldiers from the 3rd Battalion, 7th Infantry Regiment, 4th Brigade Combat Team, out of Fort Stewart, Ga., and eight more from the 428th Engineer Company, 397th Engineer Battalion, a Reserve unit based in Wisconsin.

Product managers and evaluators said they examined various robotic capabilities, including durability, ease of use, weight, range and camera clarity. It supports the MCoE's "Squad: Foundation of the Decisive Force" initiative by advancing possible lightweight robotic technology solutions.

"It's too early to tell how effective they'll be," said Maj. James Collins, the Maneuver Battle Lab's unmanned systems chief. "Soldier survivability is the main thing we want to accomplish. If they will save lives, it'll be very important to field them.

"It's all about the squad right now trying to overpower or overmatch the enemy," Collins said. "Robots have the potential to fill some of these capability gaps at that level."

The lightweight recon robots can be strapped to a Soldier's back. Once deployed on the ground, "anybody who's played Game Boy can pick this up and operate it," said Spc. Jonathon Near of 3-7 Inf.

He said the robots could mitigate casualties by acting as surrogates for U.S. personnel on the battlefield.

"Normally, it would take a fire team to go into a room to see if it or another one is booby-trapped. If you can send a robot instead, it could save lives," Near said. "It lowers the risk of me running out there or sending other guys in to find out what's behind that door or in that culvert."

The Soldiers learned how to put the robots together, employ and disassemble them.

Staff Sgt. Rodolfo Miranda, another Fort Stewart Infantryman, said a couple of robots need minor improvements to better handle the rugged terrain of Afghanistan. But he sees how the systems could be useful downrange.

"Having robots to send out there and do recon for us will definitely save lives on the battlefield," he said.

Collins said the Maneuver Battle Lab will crunch data

and assess Soldier feedback as part of a thorough post-experiment analysis. Meanwhile, JIEDDO plans to send the robots into Afghanistan soon for a forward assessment, he said.