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Contracts

## General Dynamics Awarded $13 Million by U.S. Army to Produce MK19 Grenade Machine Guns

CHARLOTTE, N.C. -– General Dynamics Armament and Technical Products has been awarded a $13 million order by U.S. Army TACOM-ARDEC for the production of MK19 grenade machine guns. Deliveries are expected to begin in June 2010 and will be completed by late 2011.

The order was made under a contract initially awarded in September 2008, and brings the total contract value to date to approximately $81 million. General Dynamics Armament and Technical Products is a business unit of General Dynamics.

According to General Dynamics Armament and Technical Products gun systems program manager, Jeffrey Gramse, "The MK19 has been in service for over 20 years, providing lethal fire against a variety of targets. The weapon's accuracy and versatility provides the U.S. Armed Forces options for use in both offensive and defensive operations."

Production work will be performed at General Dynamics Armament and Technical Products' Saco, Maine, facility using its existing workforce. Program management will be performed in Saco with support from the company's Burlington, Vt.-based Technology Center.

The General Dynamics facility in Saco is the company's production site for single- and multi-barrel aircraft and crew-served weapon systems. The site provides complete production capabilities, from design and development to manufacturing, testing and integration.

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. More information about General Dynamics is available online at www.generaldynamics.com.

Contracts

## Patria comments on the court decision in Sweden

The Stockholm County Administrative Court has today decided that the Swedish Defence Materiel Administration, FMV's decision to award the AWV 2014 contract to Patria must be cancelled and the public procurement proceedings be recommenced due to inadequacies in the procurement process.

Patria regrets the decision of the Administrative Court's decision. However, Patria is confident to succeed even in the new tender process as Patria AMV is considered to be a high quality vehicle proven in the international crisis management operations.

Facts about Patria AMV:

Patria AMV, Armoured Modular Vehicle, has been on the market since 2004. The first prototype was manufactured in 2001. Two years later the Finnish Defence Forces received the first vehicles whereas year 2004 marked the start up of serial production. Patria AMV is available in several versions and qualified for its high level of mine protection. The vehicle is fielded with excellent references from crisis management missions in Afghanistan and Chad by EU forces. Up to now over 1400 vehicles have been ordered by among others Poland and South-Africa.

Defence Industry

## BAE Systems Submits Bid For Battle-Winning FRES Vehicle

Farnborough, UK -- BAE Systems will submit its bid for the British Army's most important programme on Thursday 5 November. The bid is for "Recce Block 1", the J2bn first phase of the FRES SV (Future Rapid Effect System – Specialist Vehicles) programme.

The Scout variant will give British troops a much-needed replacement for the ageing CVR(T) Scimitar, with greatly improved protection, firepower and reconnaissance abilities. The UK Ministry of Defence has said it will select a winner in the first quarter of 2010.

The BAE Systems contender for all the variants is based on the latest version of its proven CV90 chassis, sold to six countries and recognised as the best combat vehicle in its class. For the vital Scout role, the chassis has been shortened and given a lower profile.

The company plans to minimise costs, meet the tight delivery schedule and align with the UK Armoured Fighting Vehicles (AFV) Strategy published in June by using a low-risk manufacturing approach proven with all five CV90 export customers.

"We will use a tried and tested model to ensure the UK MoD has access to the information it needs to ensure operational sovereignty," says campaign director Arne Berglund.

The chassis will be built at the company's existing production line at Цrnskцldsvik in Sweden.

The Scout turret and UK mission fit of all variants will be integrated onto the chassis in the UK, preserving jobs and the key skills necessary to continue to support British Army operations. BAE Systems has delivered well over 100 urgent operational requirements to modify vehicles in Iraq and Afghanistan, mostly to provide protection to crews against ever-changing threats.

The CV90 chassis has a mature supply chain, much of it already in the UK, and BAE Systems plans to increase UK content. The vehicle, turret technology and weapon system all have significant export potential.

Global Combat Systems managing director David Allott commented: "We are reshaping our business in line with the Armoured Fighting Vehicles Strategy. We are cutting costs, building our systems engineering skills and creating a more agile organisation to deliver FRES and Warrior upgrade. Our aim is to ensure a healthy, sustainable business which can continue to support UK land forces in training and on military operations."

The BAE Systems candidate vehicle takes advantage of the best technology available today.

"With each new customer, the vehicle has made a significant evolution to meet the changing face of warfare," says Berglund. "For instance, despite its relative light weight, our FRES candidate has mine protection comparable with main battle tanks weighing nearly twice as much. It has considerable growth potential, both physically and through its advanced electronic architecture."

The open electronic architecture – essentially the vehicle's 'operating system' –will allow 'plug and play' upgrades to electronic systems, improve battlefield communications and have training and logistics benefits, particularly if it is rolled out across the Army's vehicle fleet.

BAE Systems has already spent more than J25m – not including the weapon system - on developing an all-new British-designed turret for the Scout variant. It features sophisticated sensor systems and a revolutionary 40mm cannon. The latter's ease of use, ability to fire on the move, versatility and much-increased punch means that it will give a major improvement over the 30mm Rarden gun used in Scimitar.

Its 40mm high explosive round has more than three times the explosive power of the 30mm Rarden, while its armour-piercing projectile will penetrate more than 140mm of steel armour.

The BAE Systems FRES demonstrator vehicle has already begun mobility trials at Millbrook proving ground and fired its weapon system at the Shoeburyness range. Its turret incorporates learning from two earlier designs.

BAE Systems will submit its bid for a linked Warrior upgrade programme on 18 November. It will feature a turret which has many similarities with its FRES offering, including the cannon, and the same electronic architecture.

### About BAE Systems

BAE Systems is the premier global defence, security and aerospace company delivering a full range of products and services for air, land and naval forces, as well as advanced electronics, security, information technology solutions and customer support services. With approximately 105,000 employees worldwide, BAE Systems' sales exceeded US $34.4 billion (J18.5 billion) in 2008.

Training And Simulators

## Ground troops and pilots train for Afghanistan in simulator

A new Afghanistan database at the Air Battlespace Training Centre (ABTC) in RAF Waddington is providing ground troops and pilots with a realistic simulator in order to prepare for their upcoming Afghan deployment.

The Distributed Synthetic Air Land Training (DSALT) facility enables pilots to fly simulated missions in support of soldiers who are engaged with computer generated enemy forces on the ground.

Training Staff taking part in Exercise Mountain Dragon have said that the facilities provide the best synthetic training available anywhere in the world for the Army and RAF to practice their fighting skills.

The Air Battlespace Training Centre (ABTC) at RAF Waddington in Lincolnshire recently reopened following a major refurbishment and software upgrade offering scenarios that are more realistic than ever before.

The ABTC synthetic environment allows individuals and teams to train in a high-threat environment and carry out the Tactics Techniques and Procedures that cannot be practiced in normal peacetime training.

The exercises are supported by a technical and operational team comprised of military, ex-military and civilian backgrounds.

The military personnel that have been using the simulator include RAF Tornado aircrew from II (AC) Squadron based at RAF Marham in Norfolk, Army Air Corps personnel from Wattisham Airfield in Suffolk and soldiers from 97 Battery, 4th Regiment based at Topcliffe in Yorkshire. They are all due to deploy to

Afghanistan next year.

It is the first time that most of the soldiers have taken part in this type of integrated air-land synthetic simulator training.

RAF Waddington's Officer Commanding, Wing Commander Mike 'Elvis' Costello said:

"We can't replace the need for live training altogether but we can get as close to actual operations through synthetic simulated training.

"How good it is depends on how immersed the players get in it and they are finding it as close to the real thing as you can get without the 'knee-tremblers' you experience under fire.

"Exercises like Mountain Dragon provide targeted training for soldiers on the ground in Afghanistan operating very close to the enemy on how to work with the RAF's fast jets, and attack helicopter pilots, how to talk to them, and how to effectively execute a mission."

Among the first military personnel to try out the system, as part of Exercise Mountain Dragon, are troops who act as Fire Support Teams (FSTs) including Forward Air Controllers (FACs) on the front line.

The job of the FST is to co-ordinate modern weapons; from the Army's artillery, mortars and Apache helicopters to the bombs and missiles used by the RAF's fast jets, to engage the enemy without endangering their own comrades, allied forces or civilians.

Royal Artillery Gunnery Training Team Chief Instructor Lieutenant Colonel Stuart Gray has been involved in training all the Army Brigades deployed on Operation HERRICK and was in Helmand province during Operation PANTHER's CLAW. His team provide the Army training staff for Exercise Mountain Dragon.

He said:

"The Air Battlespace Training Centre, and specifically Exercise Mountain Dragon, provide the best synthetic training opportunity for the Army and RAF to practice their fighting skills currently available anywhere in the world.

"The course at RAF Waddington is awesome and has a significant impact on both soldiers and airmen and their ability to coordinate and deliver military firepower.

"This is truly joint training at its best and is definitely improving operational effectiveness and saving lives in Afghanistan."

The ABTC contains simulators for the Typhoon, the Tornado GR4 bomber, AWACs early warning aircraft, and the AH-64 Apache helicopter.

Its simulators can also represent the effects of Harrier GR9 aircraft, A-10 'Tankbusters', F16 fighters, C-130 Hercules Transport aircraft, attack helicopters and support helicopters.

These all operate within a common synthetic environment within which the ABTC can create computer generated forces from almost every nation in the world to act as allies, neutrals and adversaries.

A key element of the training is the debrief where the centre's software allows users to view the exercise: in a two dimensional view from above the battle space, in a three dimensional representation of the complete battle space from any position in it (including from the cockpits), to a 'through the eyes' viewpoint of the soldier on the ground calling in artillery and air support.

The ABTC is not limited to the four walls of a hangar at RAF Waddington. Its technicians have used secure long-haul networks to link up with simulators operated by the Army Air Corps, Royal Navy, United States Air Force, Australian Air Force and the Canadian Air Force.

Contracts

## EADS Defence & Security delivers the first five SIR command systems for the French Army's VBCI Vehicle

EADS Defence & Security (DS) has just delivered the first five SIR (Regimental Information System) command systems to the DGA. These systems will equip the new generation of VBCI armoured vehicles.

This delivery is the outcome of three years of development work conducted in close collaboration with the DGA and the representatives of the French Army. Ultimately, 110 VBCIs are to be equipped with the SIR, which will be used in the different theatres of operation where the French Army is deployed.

Since 2002, EADS Defence & Security, through its integrated Business Unit Defence and Communications Systems (DCS), has supplied some 600 SIR systems integrated in different types of Forward Armoured Vehicles (VAB, Vйhicules de l'avant blindй), 10' and 15' shelters, and AMX10 combat vehicles. 118 SIR kits used in off-vehicle mode have also been produced by

DCS. Today, the SIR has been delivered to 80 regiments and French Army training schools. The SIR technology is interoperable with the other command systems of the French Army and NATO.

The SIR software was entirely produced by DCS, which constantly upgrades the system to satisfy the Army's requirements. At the core of the digitisation of the battle space, this system permits fully integrated command at regiment, group, battalion, squadron and company levels. DCS developed this technology to meet the highly specific needs of the French Ministry of Defence, to speed up the Command and Control processes and fully coordinate the units and weapons systems while guaranteeing very high mobility and surveillance capacities.

DCS is currently commissioned with the production of the SIR vehicles and the scalable maintenance of the SIR software while it is being used by the Armed Forces, and will provide SIR vehicle hardware maintenance until 2013.

Hervй Guillou, President of Defence and Communications Systems, said: “In delivering this new generation of SIR command systems, EADS Defence&Security is further reinforcing its relationship of trust with the French Ministry of Defence. Thanks to the work of our teams, we are pleased and proud to provide the French Army with innovative, high-performance French technology.”

Exhibitions

## International Armoured Vehicles

The publication of the Gray report, the recent death of Colonel Thorneloe - the most senior Army officer to die on operations since the Falklands, and controversial statements regarding leading vehicle manufactures, has moved defence procurement activity to the top of the political agenda in the U.K.

Right Honourable James Arbuthnot, Chairman of the Defence Select Committee has said that the Gray report highlighted a serious deficiency in defence procurement and argued that a long term view should be taken on planning. He also said that the MOD should reduce the scope of its procurement. He suggested that the Ministry of Defence should "look at things at a long term basis ... at the moment the defence procurement budget is, as this report makes plain, completely unaffordable and completely unrealistic".

Rt. Hon. Arbuthnot will be speaking at International Armoured Vehicles, Defence IQ’s flagship event for the armoured vehicle community, which is taking place on the 1st - 5th February 2010 at the ExCel Centre in London. The event brings together senior military and industry experts, providing opportunities to gain expert insights on armoured vehicle trends, global procurement activity and lessons learnt from the battlefield, as well as to conduct business with the world's leading vehicle, system and component manufacturers, and smaller specialist suppliers. The event will "bring together many leading experts and experienced ground combat commanders to discuss the changing, joint nature of 21st century warfare and lessons learned after eight-plus years of war. I look forward to participating" General Peter Chiarelli, Vice Chief of Staff, United States Army, has said of his involvement.

“As operations shift from Iraq to Afghanistan, it is important to keep abreast of all the latest developments in this area” Abigail Stern, Program Director at Defence IQ explained. The event provides an opportunity for key stakeholders to meet each other, as well as discuss and attend sessions that examine the latest technologies, future capability requirements, international programme developments, the rapid acquisition, delivery and support of armoured vehicles and international upgrade and life extension programmes. Lieutenant Colonel Greg Burton, Canadian DND commented that the event is “a good opportunity to share procurement experience, to confirm requirements with allies and industry, and a good opportunity to network and get to know the professionals in the field”.

The speaker panel includes:

- General Peter Chiarelli, Vice Chief of Staff, United States Army
- General Sir Peter Wall KBC, CBE, Commander-in-Chief Land Forces, British Army
- Lieutenant General Andrew Leslie, Chief of Land Staff, Canadian DND
- Lieutenant General Antonio Gucciardino, General Manager of the Procurement Agency for Land Systems, Italian Army
- Major General Chris Deverell MBE, Director General Logistics Support and Equipment, HQ Land Forces, British Army
- Brigadier General Yaron Livnat, Head of Tank Programme Management, Israeli MoD

The exhibition is attracting a huge amount of interest from the community, with over 50 exhibitors confirmed already. Exhibitors include vehicle manufacturers and major OEMs, vehicle system and service providers, as well as smaller component suppliers. Organisations range from Oshkosh, Force Protection and Iveco to NIITEK, MDH Bioquell, Htuchison and Tyron.

Warn is one of the companies that has been involved in the event previously, Mr. Hugo Burgers, Business Development Director EMEA, Warn Industries, Inc. said of the 2009 show; "We were enthusiastic about the concept of having such a focused event. Our objective was to get in direct contact with our end customer to hear their feedback, learn from their experiences and use the opportunity to discuss our product offering. We are very pleased to say we achieved all of these goals and will therefore participate in the 2010 event as well."

Fabrice Parodi, Sales Manager, 01db Metravib commented that “this is a very good opportunity for us to make a lot of contacts with the end users who express their requirements with possible partners in the industry”.

Future Technologies

## GTV Completes Joint Light Tactical Vehicle Critical Design Review

STERLING HEIGHTS, Mich. -- General Tactical Vehicles (GTV), a joint venture between AM General, LLC, and General Dynamics Land Systems, formed to compete to develop and produce the U.S. Army and U.S. Marine Corps' Joint Light Tactical Vehicle (JLTV), successfully completed the Critical Design Review (CDR) this week.

GTV is the first JLTV contractor to complete the CDR, a major program milestone which entails a detailed review of the design solutions to the multi-tiered customer requirements for the JLTV Family of Vehicles. GTV is transitioning into the vehicle and trailer build and test phase for the JLTV units deliverable to the government in the spring of 2010 under its technology development contract awarded last October.

Using mature system engineering processes, GTV successfully demonstrated a design approach that balances JLTV requirements and mission capabilities focused on supporting and protecting the Warfighter. These mature and proven processes ensure GTV's JLTV can meet government requirements with flexibility, agility and confidence.

The GTV CDR follows the recent early delivery and successful government testing of GTV JLTV armor coupons.

"GTV is committed to providing a highly reliable, survivable, mobile, supportable and transportable JLTV that balances the protection, performance and payload requirements for the Soldier and Marine customers," said Don Howe, GTV program director. "I am confident that the GTV Team will deliver a JLTV family of vehicles that provide our Warfighters more capability and protection."

The GTV Team has more than 120 years of combined experience in the successful design, production and support of over one million combat and tactical wheeled vehicles. GTV offers the strength of a proven team.

General Dynamics Land Systems is a business unit of General Dynamics (NYSE: GD). Headquartered in Falls Church, Va., General Dynamics 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. More information about General Dynamics is available online at www.generaldynamics.com.

Headquartered in South Bend, Indiana, AM General operates multi-purpose military and civilian manufacturing facilities in Mishawaka, Indiana, and an Engineering and Product Development Center in Livonia, Michigan. AM General is the manufacturer of the High Mobility Multi-purpose Wheeled Vehicle (HMMWV, pronounced HUMVEE) for U.S. and overseas military services. The company also provides spare parts, field service and training support for all its products, and its Engineering and Product Development Center provides integrated logistics support and systems technical support for a variety of military systems in addition to the HMMWV. The company has more than 3,000 employees, of whom 2,300 work in the South Bend/Mishawaka area.

Future Technologies

## General Dynamics UK-led Team Ofers ASCOD SV Vehicle And Selects Lockheed Martin UK INSYS As Turret Provider

The General Dynamics team, led by General Dynamics UK, is offering a low-risk evolution of the ASCOD Infantry Fighting Vehicle, already in use with the Spanish and Austrian armies, for the Specialist Vehicle element of the Future Rapid Effect System (FRES SV).

The ASCOD SV vehicle will have the best mobility in its class, with tremendous growth potential for optimum survivability for British troops against the threats of the future. General Dynamics has integrated turrets from every leading manufacturer onto its vehicles, and has selected Lockheed Martin UK INSYS as its turret provider for the Scout variant of FRES SV.

Dr Sandy Wilson, President and Managing Director of General Dynamics UK, said: "General Dynamics' ASCOD SV has leap-frogged its rival for FRES. Based on a proven European design, ASCOD SV is the latest-generation vehicle developed specifically for FRES SV by a team of GD's British and European engineers. It is a low-risk choice for FRES SV, with excellent weight and growth potential. Our UK engineering talent and experience means that General Dynamics UK is now the country's leading integrator of Armoured Fighting Vehicles. We're offering a new solution with best-of-class technology and the confidence that comes from our track record of being trusted to deliver."

In accordance with the Defence Industrial Strategy and the AFV Sector Strategy, the bid makes full use of General Dynamics UK's indigenous Armoured Fighting Vehicle integration capability, based in South Wales and Gloucestershire, with experience of pioneering Electronic Architectures and integrating over 13,000 of the entire British Army vehicle fleet as the UK's Bowman prime contractor. The bid draws upon the global capability of General Dynamics European Land Systems, one of the world's leading suppliers of Armoured Fighting Vehicles, in delivering programmes to Britain's allies on time, on budget, with low risk.

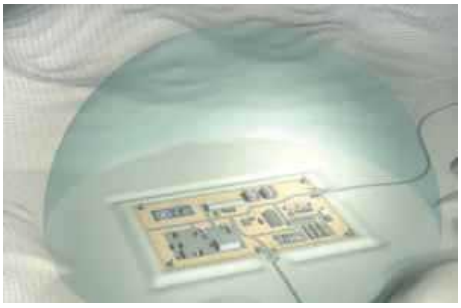
Lockheed Martin UK has been selected as one of the

only UK-based companies with the knowledge, skills and experience to integrate the 40mm Case Telescopic Weapon System, mandated as the cannon system for FRES SV and the Warrior Lethality uplift programmes.

Commenting on the selection of Lockheed Martin UK as turret provider, Dr Wilson said: “As experts in the integration of AFV electronic architectures and turrets, General Dynamics is used to selecting the best for our customers. We have selected Lockheed Martin UK INSYS as our turret provider for FRES SV because we believe that MOD will benefit significantly. The systems integration and engineering skills of the two companies will ensure that the British Army gets the very best.”

Defence Industry

## Consortium headed by Rheinmetall to build demonstrator for first comprehensive system for protecting Bundeswehr bases abroad



A consortium led by Rheinmetall Defence of Dusseldorf, Germany, is to build a prototype version of a fully networked system for protecting Bundeswehr camps, semi-static bases and similar installations.

Germany's Federal Agency for Defence Technology and Procurement (BWB) awarded the project engineering contract to Rheinmetall, Thales Defence Deutschland and Diehl BGT Defence. The consortium plans to demonstrate the prototype's functionality and efficiency at the Bundeswehr's base in Meppen, Germany, as early as next year.

This sophisticated system involves networking short- and long-range reconnaissance sensors with state-of-the-art C4I technology and high-performance effectors, including air defence assets. Following completion of the project engineering phase, BWB plans to issue a request for proposal for protection systems.

The Bundeswehr intends to deploy the systems to protect its installations and assets in places like Afghanistan from terrorist and insurgent attack. Owing to their location and layout, installations such as forward operating bases are favourite targets of militant groups.

Better protection for forward operating bases, airstrips, naval vessels, foreign port facilities and other stationary assets is thus a top priority. The three partner companies have come up with a comprehensive protection concept that promises to provide an excellent defence against symmetric and asymmetric threats. The system's designers have adopted a network-based approach, resulting in a highly effective sensor-to-shooter cycle that includes surveillance, command and control, and fires.

Consisting of legacy components as well as new subsystems that have recently come onto the market, the system is designed to operate 24 hours a day, with a built-in semiautomatic alarm function capable of activating the necessary defensive measure at any time.

As early as September 2005, in front of an audience of military guests, Rheinmetall successfully staged a live demonstration of "Protective Shield", the company's initial concept for a comparable system for safeguarding forward operating bases, thus laying the groundwork for a successful project engineering phase.

The three partners, Rheinmetall Defence, Thales Defence Deutschland and Diehl BGT Defence, each bring to the consortium a wealth of operational and technological knowledge in the field of forward operating base protection.

Drawing on their unique expertise and extensive product ranges, the companies succeeded in providing the German military with a compelling and flexible proposal for ensuring the safety and wellbeing of troops deployed in harm's way.

Defence Industry

## Thales Australia`s Hawkei Vehicle on display at Armoured Vehicles Australia

Thales Australia`s innovative Hawkei vehicle is starring at this week`s Armoured Vehicles Australia event in Canberra.

Hawkei is Thales's contender for the Department of Defence's LAND 121 Phase 4 program to replace Army Landrovers. The sleek 7-tonne 4x4 can carry up to six soldiers, and incorporates high levels of blast and ballistic protection.

An engineering mock-up of the Hawkei will be on display at Armoured Vehicles Australia (AVA), highlighting its internal seating layout and ground-breaking design.

The mock-up is a full scale representation of the vehicle which engineers use to experiment with different internal configurations and ergonomic (human factors) aspects, ensuring the end result is a vehicle designed to optimise operational effectiveness.

"The Hawkei is the best solution to meet the Australian Defence Force's light protected vehicle

requirements," said Ian Irving, Vice President in charge of Thales's Land & Joint Systems activities in Australia.

"Together with Plasan, Boeing and PAC Group, we have formed an unrivalled team. And our exclusive relationship with Plasan for LAND 121-4's Australian option has been a real bonus. We're proud to be working with one of the most sought after composite armour and hull design specialists in the world.

"The response to the Hawkei's launch has been overwhelmingly positive and the work done by Thales, along with our partners, is seen as a very compelling offer."

Thales will also display its Single Cab and Dual Cab Utility Vehicles from the Bushmaster Family of Vehicles, which are designed to offer maximum logistics capability in the harshest environments while incorporating the same levels of protection as troop-carrying Bushmasters.

"Our Protected Mobility Vehicle range continues to grow, with new vehicles and new capabilities creating increasingly flexible options for armed forces," Mr Irving continued. "Our extensive experience with the Bushmaster program, combined with our systems integration expertise, gives the Department of Defence and the ADF a strategic local capability unrivalled in Australia and specifically tailored to Australian requirements." Armoured Vehicles Australia takes place 5-6 November at the Hyatt Hotel, Canberra.

Contracts

## GDELS Receives Contract for 20 EAGLE Ambulance Vehicles for Germany

General Dynamics European Land Systems has entered a contract with the German Bundesamt fur Wehrtechnik und Beschaffung (BWB) for the delivery of 20 EAGLE protected Ambulance Vehicles. This contract, which also includes related logistic services, is in addition to the agreement signed in 2008 for the delivery of 198 EAGLE vehicles for the BWB.

This order represents an important endorsement for the EAGLE vehicle as it continues to be deployed in international peace support missions by the Republic of Germany and other customers. These 20 vehicles will be jointly manufactured by General Dynamics European Land Systems at its operating sites in Kreuzlingen, Switzerland, and in Kaiserslautern, Germany. Numerous key components are sourced from German suppliers. Deliveries will take place within 2010.

These well-protected EAGLE Ambulance vehicles will replace the vehicles currently in service with the Bundeswehr, enhancing the safety of German soldiers wherever they may serve. The vehicle will accommodate a driver and two medical personnel and will enable the transport and emergency treatment of patients under ballistic, mine and IED protection. Due to its high deployability, agility and tactical mobility, the EAGLE is suitable for the entire mission spectrum in this class of vehicles.

In addition to its crew-protection and mobility advantages, the EAGLE also enjoys low operation and training costs. Lifecycle costs of the vehicle fleet will be further minimized by the high degree of logistic commonality among the EAGLE GFF 2 class vehicles and the YAK tactical truck, which have already been successfully introduced in the German Bundeswehr. The vehicles share many essential components, such as the engine, transmission, axles, wheel drives, differentials and brakes.

This order also reflects the relationship with the BWB as a key customer for General Dynamics European Land Systems and the international success of the EAGLE, which has demonstrated its protection, reliability and mobility in operations in Afghanistan.

The development of the EAGLE vehicle was completed with the roll-out of the first prototype at the end of 2003. Just two years later, the first sales success was achieved with 90 vehicles for the Danish Army. At the beginning of 2006, the BWB purchased two EAGLE demonstrator vehicles for intensive comparative tests. In these demanding tests, the EAGLE proved its superior mobility, a high level of protection for the crew, a large usable volume, and a high payload. In 2008, Germany ordered 198 EAGLE GFF 2 class vehicles which are now in production and in service with the Bundeswehr. As a further variant, 20 EAGLE Ambulance vehicles were now ordered.

The EAGLE sets the standard for protected wheeled vehicles in the weight class of up to 9,5 t. The EAGLE has a length of 5.40 m, a height of 2.4 m, a width of 2.16 m, and it accommodates up to 5 persons. It reaches a top speed of 110 km/h on the road and manages gradients of up to 60%. The 245 hp Cummins turbocharged diesel engine, in connection with an Allison 5-speed automatic transmission, the unique DeDion axle system with the patented roll stabilizer, the tire pressure control system and the permanent all-wheel drive give the EAGLE superior on-road and off-road mobility. Thanks to the modular protection system, the EAGLE offers a very high level of protection against ballistic threats, mines, and IEDs. Furthermore, the vehicle is equipped with an NBC overpressure system.

Contracts

## Metal Storm Announces Weapon Supply Contract

BRISBANE, AUSTRALIA -- Metal Storm Limited is pleased to advise that Metal Storm Inc. has received an order from Defence Research and Development Canada to purchase three Metal Storm MAUL 12 gauge Multi-shot Accessory

Under-barrel Launchers together with ammunition. Further details will be made available upon approval by the customer, which is currently being sought.

MAUL is a small 12 gauge 5 shot semi-automatic shotgun weighing just 800 grams that can be underslung on an assault rifle, fired stand alone with a shoulder stock, or as a pistol with its pistol grip attachment. Intended mission capabilities include door breaching, less lethal payload delivery for crowd control and law enforcement, as well as providing lethal ammunition options.

Metal Storm Limited is a multi-national defence technology company engaged in the development of electronically initiated ballistics systems using its unique "stacked projectile" technology. The company is headquartered in Brisbane, Australia and incorporated in Australia. Metal Storm Limited technology and products are represented in the USA by Metal Storm Inc., which has offices in Arlington, Virginia.

Metal Storm is working with government agencies and departments, as well as industry, to develop a variety of systems utilising the Metal Storm non-mechanical, electronically fired stacked ammunition system.

Metal Storm's weapon technology uses computer-controlled electronic ignition and a system of stacked projectiles, to achieve a completely non-mechanical gun that is very lightweight and compact, providing a very high firepower to weight ratio. The Metal Storm weapons system utilizes multiple barrels mounted together on one platform which allows varying munitions types to be deployed in a single, low cost, lightweight weapon system. Firing the weapons by electronic ignition requires no moving parts, allowing reliable long term unattended weapon operation.

Defence Industry

## Navistar Defense Receives New Vehicle Orders; MRAP Engineering Contract

WARRENVILLE, Ill. -- Navistar Defense, LLC today announced that it has received $348 million in delivery orders for 1,928 additional medium tactical vehicles (MTVs) from the U.S. Army Tank-automotive and Armaments Command (TACOM).

The company also received a four-year System Technical Support (STS) contract worth up to $78 million to provide engineering support for its International® MaxxPro® Mine Resistant Ambush Protected (MRAP) vehicles.

The new delivery order fulfills the TACOM contract first awarded in May 2008 for 7,072 units and adds an additional 505 units. The order brings the total number of vehicles Navistar will supply under this contract to 7,577 units and a new award total valued at $1.65 billion. Deliveries will be completed by December 2010 and vehicle variants will include general troop transporters, petroleum, oil and lubricant (POL) trucks, wreckers and water tankers for use in Afghanistan.

“Foreign military sales of MTVs provide the foundation for Navistar’s $2 billion business annually,” said Archie Massicotte, president, Navistar Defense. “Now, Navistar has marked another milestone with its first STS contract. This award is an example of how we are constantly working to enhance and expand our offerings to position Navistar well for 2010 and beyond.”

Navistar’s STS award for the MaxxPro MRAP includes work to improve vehicle reliability, support combat issues encountered in theater, add new kits and hardware, as well as provide new vehicle enhancements. The STS award includes up to 143,000 annual labor hours, as well as parts, to be used within 12 months with the option to renew the contract for three additional years.

Navistar International Corporation is a holding company whose subsidiaries and affiliates produce International® brand commercial and military trucks, MaxxForce® brand diesel engines, IC Bus™ brand school and commercial buses, Monaco RV brands of recreational vehicles, and Workhorse® brand chassis for motor homes and step vans. It also is a private-label designer and manufacturer of diesel engines for the pickup truck, van and SUV markets. The company also provides truck and diesel engine service parts. Another affiliate offers financing services. Additional information is available at www.Navistar.com/newsroom.

Defence Industry

## Oshkosh Corporation Exceeds M-ATV Delivery Requirements for Fourth Consecutive Month

OSHKOSH, Wis. —— Oshkosh Corporation announced today it exceeded the MRAP All Terrain Vehicle (M-ATV) delivery requirements for the fourth consecutive month. Oshkosh easily surpassed the October M-ATV production requirement by producing more than 150 additional M-ATVs over the contractual 385.

The company set record production numbers for both the M-ATV and Logistics Vehicle System Replacement (LVSR) programs at its manufacturing facilities in October, including a record 40 U.S. Marine Corps’ LVSRs. In fact Oshkosh produced a total of more than 1,250 tactical wheeled vehicles, meeting all contractual obligations for the month including the Family of Heavy

Tactical Vehicles (FHTV) and Medium Tactical Vehicle Replacements (MTVR). The first M-ATVs and LVSRs have been delivered to Afghanistan in recent months to support ongoing combat and logistics operations.

"We continue to increase our high-quantity M-ATV production levels while meeting our other contractual obligations," said Josef Matosevic, Oshkosh Corporation senior vice president of global operating systems and vice president operations - Defense. "Our top priority is making sure our customers' needs are met for our entire line of high-performance vehicles. We achieve this by continuously improving quality levels at our facilities through design innovations, lean manufacturing and assembly process improvements."

Existing Oshkosh manufacturing facilities have available production capacity for all current and pending military vehicle programs, including M-ATV and the U.S. Army's Family of Medium Tactical Vehicles (FMTV), as well as any surges in production. To date, Oshkosh has received orders for 5,219 M-ATVs from the U.S. Army Tank-automotive and Armaments Command Life Cycle Management Command (TACOM LCMC) as part of orders valued at more than $2.8 billion. The company will ramp production up to 1,000 vehicles per month in December.

The Oshkosh® M-ATV uses the Oshkosh patented TAK-4® independent suspension system that also is featured on more than 10,000 Medium Tactical Vehicle Replacements (MTVR), providing 16 inches of independent wheel travel and a 70 percent off-road profile capability. The TAK-4 system has undergone more than 400,000 miles of government testing and is being retrofitted on more than 2,400 legacy MRAPs for improved off-road mobility. It also is used on the Army's next-generation Palletized Load System (PLS).

Oshkosh Defense teamed with Plasan North America to provide an advanced armor solution for the M-ATV. Plasan also developed the armor system used on more than 5,000 legacy MRAPs and thousands of Oshkosh MTVR Armored Cabs already in theater.

The Oshkosh heavy-payload LVSR® has an on-road payload capacity of 22.5 tons and an off-road payload capacity of 16.5 tons. It uses the TAK-4 independent suspension system and mechanical rear-steer technology for superior mobility on demanding off-road terrain and unimproved roads. The vehicle also features Oshkosh's Command Zone™ embedded diagnostics to monitor major vehicle systems, including the engine, transmission and brakes.

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Exhibitions

## Elbit Systems, AM General and Plasan Present at EXPOMIL 2009 LEGATUS - Light Tactical Reconnaissance All-Terrain Armored Vehicle integrated on HMMWV (Humvee) platform

Haifa, Israel -- Elbit Systems Ltd. announced that it teamed with AM General and Plasan to present the

LEGATUS Light Tactical Reconnaissance All Terrain Armored Vehicle integrated on a HMMWV (Humvee) platform at EXPOMIL 2009.

At the show, set to take place in Bucharest, Romania from November 11 to 14, the companies will showcase the LEGATUS for the first time, at the Elbit Systems exhibition booth 28-33.

The LEGATUS is an armored 4x4 High Mobility Multi-Purpose Wheeled Vehicle (HMMWV or Humvee) built for various customers' reconnaissance needs. The integrated vehicle represents the team's capabilities in fielding various armored and unarmored applications. LEGATUS is fully armed to fend for itself in the battlefield and offers a vast array of protective electronic devices, while performing its main task of providing mobile, real-time, supportive intelligence to its allocated land units and to the headquarters. This air transportable and greatly maneuverable vehicle proves itself to provide vital vision-based terrain scouting and target acquisition, while operating in harsh terrain and every weather condition, at long range, day and night.

LEGATUS is equipped with a full protection and detection suit, primary including the following latest generation Elbit Systems made systems: second generation 12.7 mm ORCWS-M weapon station, Mast-mounted Stabilized Observation System, Thermal Driving Camera, GPS Navigation and North Finding System, Digital Crew Intercom, VHF\UHF Radio, Laser Warning System combined with protective Smoke Grenade Launchers, full spectrum Camouflage Net and other features.

Each of the vehicle's four crew members uses a tactical computer or a display based on a color flat LCD screen. These four operating stations are linked to each other and share and distribute the intelligence to the external world using the cabin electronics and the Elbit Systems' well proven Weapon Integrated Battle Management System (WINBMS) software. LEGATUS is also equipped with a Life Support Systems made by Kinetics (a wholly-owned subsidiary of Elbit Systems) consisting of a NBC protection systems combined with air conditioning and an Automatic Fire Suppression System.

The protection suit of LEGATUS or of any other similar version of this tactical vehicle can upon request be reinforced by the installation of the successful EJAB counter-IED Jammer displayed at the Elbit Systems stand by Elisra (subsidiary of Elbit Systems).

The Humvee's Armor Protection suit and cabin's

collapsible seats are designed and produced by Plasan and can be tailored to meet the needs of different missions and threat environments.

The Humvee is the world's most popular 4x4 Light Tactical All-Terrain vehicle, with more than 237,000 produced for the U.S. forces and those of more than 50 other nations in both armored and unarmored configurations. Military operators praise its excellent cross country mobility capabilities, extensive reliability and durability, easy maintenance and low life cycle costs.

### 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. For additional information, visit www.elbitsystems.com.

Army

## Mastiff Group deploys to Afghanistan

More than 60 soldiers from 3rd Battalion The Yorkshire Regiment (3 YORKS) and The King's Royal Hussars (KRH) have deployed to Afghanistan for the vital role of transporting troops and protecting large convoys in Helmand province.

The two Wiltshire-based Army units have formed a 'Mastiff Group' for Operation HERRICK 11.

The troops will be operating the Mastiff protected mobility vehicle. It is heavily armoured and is used to transport troops and protect large convoys, as well as to directly engage the Taliban with its advanced weapons systems.

In preparation for their deployment, the 3 YORKS and KRH soldiers recently carried out their last pre-deployment training exercise on Salisbury Plain where they were put through their paces during a demanding week.

They then joined up with the 1st Battalion Coldstream Guards Battle Group before flying out to Afghanistan. Officer Commanding Nick Mackenzie said:

"The Mastiff Group will perform a vital role in Afghanistan.

"They have undergone an intensive training package prior to deployment and are fully prepared for the challenges that lie ahead in Helmand province."

It has been a busy but successful year for 3 YORKS which is based in Warminster.

A company's worth of soldiers are now returning from Afghanistan and another company returned from Iraq at the beginning of August, when they were amongst the last British combat troops to leave the country.

For many of the KRH soldiers, who are based in Tidworth, it will be their second winter tour in Afghanistan having previously deployed on Operation HERRICK 7.

Army

## Preparing vehicles for Afghanistan in UK

Often perceived as just a storage facility, the huge Army vehicle depot in Gloucestershire is actually where military vehicles, from tanks to quad bikes, are fully prepared for use in Afghanistan. Report by Richard Long.

With the operational tempo in Afghanistan quicker than ever, the need for fully-functional vehicles to support troops on the ground has never been greater.

Such a crucial role falls on the Defence Storage and Distribution Agency's Army vehicle depot in Ashchurch, a 272,000-square metre facility capable of holding everything from the mighty Challenger 2 battle tank to the comparatively lightweight quad bike trailer.

The vast site boasts row after row of hardware, with brand new Panthers, Jackals and Mastiffs among the huge inventory of wagons, trucks and support vehicles waiting to be deployed.

Such an array of resources could lead to the inevitable question as to why this fleet is stationed at a storage site in deepest Gloucestershire and not on the front line in Helmand province.

The answer is simple. In the commercial world a new car will roll off the production line, head to the showroom and find its way into the hands of a grateful owner, but for the Army the swift flow from factory to driver is not an option.

Lieutenant Colonel Robert Gascoigne, Royal Logistic Corps (RLC), who is responsible for Whole Fleet Management, explained:

"A lot of these vehicles are coming straight to us from industry and people often regard this place as a storage facility. It is a lot more than that.

"First of all we have to inspect the vehicles and conduct quality assessments - if anything is not right it goes back. If this equipment is going on operations it has to be fully working.

"We realise the soldiers want more than a vehicle. It has to be armoured, it has to be fitted with electronic countermeasures and Bowman radio, which needs to be tested and working.

"These things have to be brought together, it is all done here, and when these vehicles are delivered to Camp Bastion they are ready for the soldiers to jump in and go."

Personnel at Ashchurch have to juggle the demands of supporting operations with routine vehicle tasks but it is clear where their focus lies:

"Urgent Operational Requirements [UORs] are very much our main priority, it is work we take a great deal of pride in delivering," said Major Mark Wilson, RLC, the head of the DSDA establishment.

"We have never failed to meet a UOR deadline. All our projects are different but we look to turn a vehicle round in five days. However, it can be done overnight if needed."

Around 4,200 vehicles have been issued from the facility since October 2008, with more than 800 being sent out in support of operations.

Ashchurch has 25 military personnel working alongside a civilian staff of up to 180 people, all of whom are determined to deliver the best kit possible for soldiers on the ground.

Civilian mechanics inspect all new arrivals in assessments that exceed MOT standards. The companies who supply the Army's fleet also have a presence on site so any problems can be immediately addressed, rather than returning a vehicle to a factory hundreds of miles away:

"We do not hold things against them, that is why they have these facilities," explained Warrant Officer Class 2 Simon Gray, RLC, a vehicle specialist on the UOR programme.

"We ask them to develop a vehicle in 12 months and they are under pressure to deliver, but we understand there will be problems."

As well as priming new tanks, trucks and transport for theatre the site is also responsible for supplying vehicles for training purposes.

This relates to both future users and maintenance personnel who have the opportunity to familiarise themselves with the equipment on training areas such as Salisbury Plain.

Another question frequently thrown at the Army is why the hardware from operations in Iraq is not transferred directly to Afghanistan.

Ashchurch is responsible for housing returning kit and has recently received 900 vehicles that were used on Op TELIC.

Some may be in need of upgrades and improved armouring, given the differing nature of the conflicts in Iraq and Afghanistan, while others may have reached the end of their shelf life:

"It is a tired fleet," said Major Wilson.

"There were high demands on the vehicles in Iraq and they come back for a new lease of life before being passed on for operations or being disposed of.

"The IED [improvised explosive device] threat in Afghanistan is extremely high. While there was a threat on Op TELIC it was of a different nature and that contributes to the fact these vehicles cannot be shipped straight to Afghanistan."

This article is taken from the November 2009 edition of SOLDIER - Magazine of the British Army.

Contracts

## BAE Systems Awarded Share Of M-ATV Armor Contract

CINCINNATI, Ohio -- BAE Systems has been awarded a multi-million dollar contract by Plasan North America to provide armoring solutions and components for MRAP All Terrain Vehicles (M-ATV) bound for deployment in Afghanistan.

The contract with Plasan underscores BAE Systems on-going and long-standing commitment to American troops and the MRAP program.

"Our history of support for the MRAP program ranges from designing and developing three MRAP variants, to supplying critical components on every MRAP platform, including—with the Plasan contract—the M-ATV," said Tony Russell, president of BAE Systems' Security & Survivability business.

As a subcontractor, BAE Systems will be working directly with Plasan which is providing M-ATV armoring kits to the Oshkosh Corporation to fulfill its contract with the U.S. Army TACOM LCMC.

"The partnership between BAE Systems and Plasan represents the first of what we believe will be many collaborative efforts between our two companies. Together, we are focused on ensuring the vehicles we collectively armor do their job and keep our service men and women well protected on the battlefield," added Russell.

Plasan, with headquarters in Israel, is a global leader in survivability and combat-proven armor solutions. "We are proud to take part and support Oshkosh and the U.S. Military's efforts to protect American troops, and we are proud to have BAE Systems on this vital program," said Dani Ziv, CEO, Plasan. "Plasan developed a strong and dedicated supply chain that supports this exceptional program, and we are happy to share our business success with our partners in order to benefit the war fighters," added Ziv.

Work on the contract will begin this month at BAE Systems' production facilities in Fairfield, Ohio.

BAE Systems' Security & Survivability business is a leader in protection, security and survivability systems for land, air and naval applications. It is a technology leader in lightweight materials, including composites, ceramic and transparent armor technologies; integrated vehicle armor systems; vehicle and aircraft survivability components and accessories; and soldier protection equipment, sold primarily to the government and other defense contractors.

**About BAE Systems**

BAE Systems is the premier global defense, security and aerospace company delivering a full range of products and services for air, land and naval forces, as well as advanced electronics, security, information technology solutions and customer support services. With approximately 105,000 employees worldwide, BAE Systems' sales exceeded J18.5 billion (US $34.4 billion) in 2008.

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Contracts

## Oshkosh Defense Receives $438 Million Order for Additional 1,000 M-ATVs

OSHKOSH, Wis. -- Oshkosh Corporation announced today it has received an additional $438 million award from the U.S. Army Tank-automotive and Armaments Command Life Cycle Management Command (TACOM LCMC) for 1,000 MRAP All Terrain Vehicles (M-ATV).

This is the fifth award Oshkosh has received to supply M-ATVs and brings the total number of vehicles Oshkosh will deliver to 6,219. The aggregate amount of the five awards is valued at more than $3.2 billion.

"The most significant way we can show support for our Armed Forces is high rate, quality production of these important vehicles that provide the mobility and survivability necessary for the harsh Afghanistan terrain," said Robert G. Bohn, Oshkosh Corporation chairman and chief executive officer. "Additionally, through our extensive network of aftermarket services, we are supporting the vehicles in-theater with parts supply and field service representative support."

Since receiving the initial award on June 30, 2009, Oshkosh has delivered ahead of its contracted, accelerated delivery schedule every month and will ramp production up to 1,000 vehicles per month in December. Existing Oshkosh Defense manufacturing facilities have available production capacity for all current and pending military vehicle programs, including M-ATV and the U.S. Army's Family of Medium Tactical Vehicles (FMTV), as well as any surges in production.

"Oshkosh Corporation is also extremely honored to welcome U.S. Secretary of Defense Robert Gates, who will be visiting Oshkosh on Thursday (Nov. 12) to thank our employees who are working on the M-ATV project for all their hard work and dedication," Bohn added.

The Oshkosh® M-ATV is based on the proven Medium Tactical Vehicle Replacement (MTVR) chassis and uses the Oshkosh TAK-4® independent suspension system to provide superior mobility, including 16 inches of independent wheel travel and a 70 percent off-road profile capability. The TAK-4 system has undergone more than 400,000 miles of government testing and is being retrofitted on more than 2,400 legacy MRAPs for improved mobility. The suspension system is featured on more than 10,000 MTVRs used by the U.S. Marine Corps and Navy Seabees, as well as on the Army's next-generation Palletized Load System (PLS) and the Marine Corps' Logistics Vehicle System Replacement (LVSR).

Oshkosh Defense teamed with Plasan North America to provide an advanced armor solution for the M-ATV. Plasan also developed the armor system used on more than 5,000 legacy MRAPs and thousands of Oshkosh MTVR Armored Cabs already in theater.

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Army

## Indian Army to procure over 100 Armoured Personnel Carriers

In an effort to strengthen its mechanised forces, according to DD India, the Indian Army is looking forward to procure over 100 Armoured Personnel

Carriers (APCs) for deployment in different kinds of terrains.

The Army has initiated the process of acquiring these APCs by issuing a Request for Information (RFI) recently.

As per the RFI issued by the Army, at least 100 APCs will be procured from the vendor chosen after the acquisition process and the rest would be licence-produced in India after a Transfer of Technology to an indigenous firm.

According to Defence Ministry officials, over a period of five years, the Indian army is looking to add over 500 new APCs to its existing fleet of around 1,500 Russian-origin BMP-1 and BMP-2's.

The Indian Army at present has 26 mechanised infantry battalions with its APCs having the capability to carry around 10 soldiers each.

Some of the APCs are equipped with missile launchers for firing Anti-Tank Guided Missile (ATGM).

The Indian Army wants its new APCs to be capable of being air-lifted in IAF heavylift aircraft such as the IL-76 and C-130Js to be procured from US in the near future.

The new APCs should also be capable of being carried in Navy's amphibious warships such as the INS Jalashwa and the INS Airavat.

Future Technologies

## Boeing Receives Contract to Develop Miniature Weapon Technology

ST. LOUIS -- The Boeing Company received a $500,000 U.S. Air Force Research Laboratory contract on Sept. 30 for the first phase of a program to demonstrate miniature weapon technology for use on unmanned airborne vehicles (UAV).

"UAVs are increasingly called upon to perform strike operations, and this weapon technology is designed specifically for those missions," said Carl Avila, director of Boeing Phantom Works' Advanced Weapons and Missiles. "The concept behind this technology is designed to generate very low collateral damage and allows warfighters to engage a variety of targets, including those in a suburban terrain environment."

As the prime contractor during the initial nine-month program, Boeing will use its experience on the Joint Direct Attack Munition and Small Diameter Bomb programs to develop the system integration, seeker, avionics, guidance and control, and mission planning systems. Key suppliers KaZaK Composites Inc. will build the airframe, Ensign Bickford Aerospace & Defense Company will design and build the warhead, and Systima Technologies Inc. will provide integration and testing services for the launcher. Science Applications International Corporation will provide systems engineering for the seeker and seeker algorithms, and the Mustang Technology Group will provide height-of-burst and radar options. The two-year second phase of the program, if awarded, is valued at $6.5 million.

A unit of The Boeing Company, Boeing Integrated Defense Systems is one of the world's largest space and defense businesses specializing in innovative and capabilities-driven customer solutions, and the world's largest and most versatile manufacturer of military aircraft. Headquartered in St. Louis, Boeing Integrated Defense Systems is a $32 billion business with 70,000 employees worldwide.

Future Technologies

## Popular Science Selects Ears® Sniper Detection System for 2009 Technology Award

QinetiQ North America announced that its sniper detection systems, Ears® and SWATS (shoulder-wearable acoustic targeting systems), have been recognized as one of the top technology innovations of 2009 in Popular Science Magazine's annual "Best of What's New" awards.

QinetiQ North America's unique gunshot localization solution, the first shoulder-mounted system of its kind, is the only sniper detection system to earn this prestigious award, which recognizes the top technology innovations of the year.

Ears provides a miniature sensor and display mounted on the warfighter's non-firing shoulder. The system listens for hostile fire and instantly detects incoming rounds, pinpointing the location of the enemy shooter - including range, bearing and grid position - even as the warfighter moves. The warfighter hears constantly updated information on the precise location of the source of the hostile fire and can immediately respond. This immediate react-to-contact capability increases situational awareness, improves overall survivability and enhances force protection.

Ears is the smallest, lightest, lowest power, lowest profile and most versatile gunshot localization system available. The shoulder-worn system, SWATS, weighs less than one pound. More than 1,500 Ears systems are currently deployed with troops in Afghanistan and Iraq.

Ears applies proprietary algorithms to eliminate false alarms. In addition to the individual shoulder-worn systems, Ears also can be configured to protect fixed

sites and moving vehicles. Vehicle and fixed-site installations take less than 10 minutes; individual warfighters can be outfitted with SWATS in less than 5 minutes.

"The increased use of marksmen, or snipers, to target our troops in Afghanistan makes improved situational awareness more critical than ever to the survivability of our warfighters - our country's most critical asset," said Dr. William Ribich, president of the Technology Solutions Group. "QinetiQ North America created the Ears family of gunshot localization systems to give troops on the ground the ability to respond instantly and accurately to hostile fire."

"For 22 years, Popular Science has honored the innovations that surprise and amaze us − those that make a positive impact on our world today and challenge our views of what's possible in the future." said Mark Jannot, editor-in-chief of Popular Science. "The Best of What's New Award is the magazine's top honor, and the 100 winners − chosen from among thousands of entrants − represent the highest level of achievement in their fields."

Contracts

## Oshkosh Defense Awarded $20 Million Contract to Supply Egypt With Heavy Equipment Transporters

OSHKOSH, Wis. -- Oshkosh Defense, a division of Oshkosh Corporation, has received a contract with the U.S. Army Tank-automotive and Armaments Command Life Cycle Management Command (TACOM LCMC) to supply more than 40 new M1070 Heavy Equipment Transporters (HET) and 635NL trailers to Egypt.

The Oshkosh® HET is designed to rapidly transport M1A1 Main Battle Tanks, armored vehicles and self-propelled guns, as well as a six-person crew, so the vehicles and soldiers arrive in mission-ready condition.

In addition to spare parts, the contract, valued at $20 million, includes assistance from the Oshkosh team of Field Services Representatives (FSR) – factory-trained technicians who provide in-field support and enhance military mobility. The trailers will be co-produced at the Ministry of Military Production's Egyptian Tank Plant near Cairo, where the Oshkosh Medium Tactical Truck (MTT) also is co-produced.

"Providing militaries around the world with the best means of transport is something integral to our mission at Oshkosh Defense," said Andy Hove, Oshkosh Corporation executive vice president and president, Defense. "With its durability and mobility, the HET fulfills the Egyptian military's needs, and the support of our team of FSRs ensures the vehicles will continue to operate in optimal condition."

The HET is part of the company's line of international vehicles designed to meet a variety of logistical and operational needs around the world.

Contracts

## BAE Systems awarded $601 million contract for Bradley Fighting Vehicles

ARLINGTON, Va. -- The U.S. Army has awarded BAE Systems a contract for $601 million to refurbish some of its heavy infantry vehicles.

Through a public-private partnership with the Army's Red River Army Depot, BAE Systems will repair and upgrade 606 Bradley Fighting Vehicles. This process, known in the military as reset, mitigates the effect of combat use, replaces battle damaged vehicles and provides the military with vehicles in pre-deployment conditions.

"The Bradley plays an integral role in the Army's Heavy Brigade Combat Teams," said Joe McCarthy, vice president and general manager, HBCT Systems. "By resetting these vehicles to pre-deployment condition, we will make sure that our troops are able to continue to execute the mission."

Under this award, BAE Systems will reset 346 Bradley A3 vehicles, 141 A2 ODS vehicles and 119 A2 ODS SA vehicles. Initial disassembly and subsystem rebuild will be performed at the Red River Army Depot, with final disassembly and structural modifications completed by BAE Systems in Fayette County, Pennsylvania. Final assembly, integration and testing will be conducted at the company's facility in York, Pennsylvania.

During final assembly in York, Bradley vehicles will also be equipped with upgrades including Improvised Explosive Device Armor, Bradley Urban Survivability Kits and other engineering changes designed to improve protection for soldiers.

"I am pleased to learn that the Army continues to turn to the Commonwealth to repair and upgrade the Bradley Fighting Vehicle," said Sen. Arlen Specter, D-PA. "This contract award is a testament to the skilled men and women employed at the York and Fayette BAE Systems facilities and will be a strong boon to their economies by

sustaining hundreds of high-paying jobs."

Work on the contract will begin immediately and BAE Systems will start to deliver completed vehicles to the military this summer, with final deliveries expected to be completed by March 2010.

The contract is managed by the Army's TACOM Life Cycle Management Command.

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

BAE Systems manufactures Bradley Combat Systems, which are part of the U.S. Combat Systems line of business. U.S. Combat Systems is a modern, efficient, full-spectrum developer, integrator and supplier of survivable, lethal ground and naval combat platforms. U.S. Combat Systems is a main supplier to the U.S. Army's Heavy Brigade Combat Teams, an integral developer of mine-protected and future combat vehicles, and a top producer of naval guns and missile launchers.

Robots

## QinetiQ`s Dragon Runner robots are sent to Afghanistan to support British troops

Responding to an urgent operational requirement QinetiQ, a leading international supplier of military robots, today announced that it has been awarded contracts by the UK Ministry of Defence (MOD) to supply approaching 100 Dragon Runner robots, associated spares and technical services to support of current military operations in Afghanistan.

Dragon Runner is a small, rugged robot that weighs between 10-20kg depending on the chosen configuration. It can be easily carried by a soldier in a backpack and is robust enough to operate in rough terrain to help protect troops. The variant selected by the UK MOD is equipped with a manipulator arm to assist with the disarming of improvised explosive devices but the versatility of the Dragon Runner platform means that it can also be configured for a variety of other reconnaissance and surveillance operations. The Dragon Runner robot is also able to operate in sewers, drainpipes, caves and courtyards to detect danger.

Already being deployed, the all-seeing, all-listening Dragon Runner has the ability to send back video footage back to the operator at a safe distance thereby enabling troops to assess a situation prior to moving forward or entering a structure, potentially safeguarding lives.

The backpack-able Dragon Runner is particularly suited to operational environments similar to those experienced in Afghanistan where the road system has been ravaged by almost continuous fighting since the late 1970s and where many troop movements are conducted either on foot or by helicopter. The use of robots also has significant benefits in Afghanistan where the United Nations estimates that 200,000 people have been disabled by landmines and the explosive remnants of war.

QinetiQ's initial contract with the UK MOD is valued at over J12m. This includes the supply of replacement parts and the provision of support throughout the operational life of the systems. This is an essential part of a UK based maintenance and support plan that has been carefully designed to enable the UK MOD to return battle-damaged robots to active duty as quickly as possible.

Dragon Runner was originally developed by Automatika, a US company acquired by QinetiQ North America. The robot has since been further developed as a result of UK and US military user input and it can travel at speeds of around 5mph, travel over rough terrain, as well as climb stairs and open doors.

The basic chassis is 20cm wide, 7.5cm tall and 23cm in length and can be easily adapted in the field with various accessories and a manipulator arm to be mission specific. In addition to IED identification and defeat, other functions include perimeter security, checkpoint security and the inspection of suspect vehicles.

"With this very important contract and our work with the UK and US military, Dragon Runner is set to become a vital tool in military campaigns throughout the world," said Mary Carver, MD of QinetiQ's Technology Solutions business. "The majority of the 3,000+ military robots that we have delivered to our customers so far are being used to disable roadside bombs however we're now seeing increased demand for military surveillance and reconnaissance as well as for homeland security and specialist intelligence operations."

Defence Industry

## BAE Systems To Improve Soldier Protection Through U.S. Army Vehicle

## Armor Contract

AUSTIN, Texas -- BAE Systems has received a $42 million U.S. Army contract to produce bar armor kits that protect soldiers in ground vehicles from rocket-propelled grenade attacks.

The company will produce L-ROD® bar armor kits for the U.S. Army TACOM Life Cycle Management Command's RG-31 and Cougar mine-resistant, ambush-protected vehicles.

L-ROD bar armor is a lightweight, modular bar armor system made of an aluminium alloy that provides protection against rocket-propelled grenades, or RPGs, without compromising the operational capabilities of the vehicle or adding significant weight.

"These RPG defense systems represent BAE Systems' commitment to the soldier and our guiding principle — "We Protect Those Who Protect US®," said Neil Piscitelli, L-ROD director for BAE Systems. "L-ROD bar armor saves lives. There is a genuine need for this product, and we will continue to deliver."

Weighing less than half of comparable steel designs, the low-cost L-ROD system bolts onto the vehicle without welding or cutting and can be repaired easily in the field due to its modular design. BAE Systems manufactures the L-ROD bar armor kits on an automated production line in Austin that opened earlier this year.

Exhibitions

## Beth-El To Combat Operational Challenges At International Armored Vehicles

LONDON, UK –– Beth-El Industries will be exhibiting their new NBC-filtration product line International Armoured Vehicles taking place on the 1st to the 5th February, at the ExCel Centre, London.

With operational challenges in conflict scenarios in Afghanistan ranging from new and unseen terrorist enemies, to extreme environmental conditions and terrains, force protection is now recognised as being of crucial importance to achieving operational success.

New threats include a whole host of scenarios, from chemically laced roadside bombs (Chlorine IED's) to the remote and hostile environments that need to be accessed in order to rout terrorist enclaves. The nuclear, biological, and chemical threat protection systems which are currently in service, were designed specifically for the Cold War, and are proving now hugely inadequate, which further emphasises the need for a higher level of protection against these new operational challenges.

Beth-El's unique and versatile systems can be customised into any armoured vehicle and are able to remove sand and dust from crew compartments in peace-time operations, not only protecting crews, but also extending the life-time of sensitive electronic equipment inside the protected environment.

The exhibition, which is taken place alongside the main conference at International Armoured Vehicles, is drawing considerable interest from the AFV community, with over 50 exhibitors signed up already. Beth-El will be joined by an array of vehicle manufacturers and major OEMs, vehicle system suppliers and service providers. Companies range from Oskosh, Plasan, and Ruag to Elbit Systems, MDH Bioquell, Hutchison and Tyron.

The event is taking place against the backdrop of a challenging security environment, which is proving increasing complex and unpredictable. As a consequence, there is a growing need to hasten global efforts to upgrade armoured vehicle military capabilities. Whilst experience, education and awareness remain crucial dynamics in combating new threats, the provision of adequate force protection is a necessity.

Defence Industry

## Supacat Demonstrates Jackal ISTAR

Supacat, working in conjunction with Thales, recently demonstrated their joint prototype Jackal ISTAR variant at the Owning the Night Exhibition at Bisley on 10/11 Nov 09.

The system demonstrates the joint team's capability to easily integrate advanced weapons and sensor systems onto a Supacat Jackal recce platform to significantly enhance the ISTAR capability on offer.

Using a Supacat platform in the UK MoD's Jackal 2 configuration, the system was fitted with the Kongsberg Protector Remote Weapon Station (RWS) that has already been procured for two UK MOD programmes and also the newly developed and now in service Remote Optical Target Acquisition System (ROTAS) that incorporates the Catherine Mega Pixel thermal camera, high zoom colour TV camera and the Celt laser. This allows for accurate lased ranges to targets combining with the GNAV sat Nav system for precise target and own vehicle grid referencing. The system is fully

qualified and now in service on the Talisman Route proving & Clearance programme.

The demonstration successfully proved the maturity of the products for easy installation onto the Supacat Jackal aimed at the recce role of Jackals on operations. The proposition is that teams will install a fleet mix of RWS and/or masts to give the FIND & Strike capabilities at the same time bringing the traditional top mounted pintal gunner into the protected mine blast seating and seat harnessing without compromising his situational awareness. The recent integration has demonstrated the benefits of stabilised weapons systems and also now includes helmet mounted displays for the vehicle commander who presently sits next to the driver. The team has conducted separate live firing trials that have proven the immense capability enhancement offered by stabilised systems with 'fire on the move' functionality. The system integration has been designed to enable the system or part-system to be easily fitted and removed or re-configured in-theatre.

The Kongsberg Protector RWS has the following functions:

- Slew to Cue
- Single shot capability modes of fire
- Full stabilisation fire on the move
- Laser pointer for target hand off etc
- High power spotlight with IR filters
- Multi weapon fits GPMG,HMG,GMG
- Auto tracking
- Ballistic calculations so no aim off or correction routin

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Defence Industry

## J1 Billion Upgrade Bid Promises More Punch For British Army Warriors

LEICESTER, United Kingdom -- British Army Warrior infantry fighting vehicles are set for a major boost in combat effectiveness by 2013 if a BAE Systems bid to upgrade the fleet is successful.

The bid, submitted a day before the 18 Nov deadline, is for the J1bn Warrior Capability Sustainment Programme (WCSP), which will provide the mainstay of the Infantry's frontline fleet in Afghanistan and future conflicts. It features a new turret and weapon system to increase firepower; a fully digital 'operating system' to improve fightability and survivability, and allow plug-and-play future upgrades; and a modular armour system for quick and simple adjustments to protect against ever-changing threats.

BAE Systems has invested over J40m of its own money in developing the new gun, turret and electronic architecture to ensure the equipment can be delivered to the front line on time and to budget.

Jan Sцderstrцm, managing director of BAE Systems' Vehicles business, explains the thinking behind its decision to opt for an all-new turret.

"As the manufacturer of Warrior, we took the view that modifying the existing turret was not a satisfactory solution as it could raise safety issues. Instead we have developed a completely new design which fully meets the UK Ministry of Defence's protection requirements and has many similarities with our FRES Scout turret to maximise the benefits of commonality in areas such as training and logistics."

The front of BAE Systems' FRES and Warrior turrets are very similar - the gunner crew station is identical - and feature optimised crew stations and large hatches designed to accommodate today's and tomorrow's soldier wearing full Osprey body armour. (Soldiers are getting bigger and crew positions in many existing vehicles are becoming too cramped to accommodate them or allow easy exit from the vehicle in an emergency).

The BAE Systems turret design is also optimised for the all-new weapon system (CT40) mandated by the UK MoD for Warrior and FRES SV. The ammunition is carried low to optimise performance, crew safety and the highly-reliable feed system can be accessed from under armour. It is based on the highly successful MTIP2 programme which saw the BAE Systems CT40 turret, mounted on Warrior, fire on the move over a period of four months in 2008.

The CT40 weapon system and turret's ease of use, ability to fire on the move, versatility and much-increased punch means that it will give a major improvement over the 30mm Rarden gun currently used in Warrior. It fires a one-kilo high-explosive round which has three times the terminal effect of the Rarden shell and can be detonated in mid-air above the target to attack troops behind cover.

BAE Systems has delivered well over 40 Urgent Operational Requirements (UORs) for Warrior in the last five years, many of them working closely with the Defence Support Group, and this experience has also fed into two other areas of its bid – the Enhanced Electronic Architecture (WEEA) and the Modular Protection System (WMPS).

WEEA is very similar to the electronic architecture BAE Systems is offering for FRES SV and is genuinely open architecture, "future-proofing" the vehicle and allowing simple integration of new or upgraded systems from any vendor.

WMPS will provide a 'productionised' mounting system for the various armour fits developed for the Iraq and Afghanistan conflicts under UORs and allow quick changes to meet new threats. BAE Systems has also developed a new blast-attenuating driver's seat to further improve earlier UOR mine protection measures, such as a new belly plate and stiffer suspension to restore the vehicle's ride height.

"All these changes have to be managed in a holistic way," says Warrior campaign director Judith Eastwood. "For instance, as Warrior weight has grown, we have developed better brakes. These generate extra heat, which has to be managed to avoid knock-on effects.

"We have 30 years' experience of Warrior, so we understand it as a system and can provide and support a technically superior, affordable WCSP solution that will meet the needs of the British Army for the next 25 years."

Under WCSP 643 vehicles will receive WEEA and WMPS. 449 of them will also get the new turret and weapon system under the WFLIP (Warrior Fightability and Lethality Improvement Programme). The remaining vehicles will carry out other roles including repair and recovery.

Defence Industry

## Mercedes-Benz delivers first of 1,200 specially made G-Class offroad vehicles to Australian Army

Graz, Austria/Melbourne -- Germany`s Mercedes-Benz delivered on Oct. 29th 2009 the first of 1,200 specially made G - Class offroad vehicles to the Australian Army.

The new purpose-built cross-country vehicles will replace the Australian Defence Force's (ADF) existing tactical vehicle fleet. Their entry into the Australia's military is the result of a large-scale project by the ADF, internally coded as 'Land 121' but more commonly referred to as 'Project Overlander'.

Only one year to the day the ADF signed contracts for the supply of the vehicles, the first 11 prototype units were handed over in the G-Class assembly plant in Graz. Head of Mercedes-Benz Cross Country Vehicles Divison Axel Harries led the ceremony attended by Brigadier David O'Brian of the Australian Army, the Australian Ambassador to Austria His Excellency Ambassador Michael Potts and the General Manager of major Australian sub-contractor G.H. Varley.

The Overlander Project sees the replacement of all existing Australian military field vehicles and trailers with up-to-date modern versions, making it one of the ADF's largest peace-time projects. The contract will see the delivery of 1200 Mercedes-Benz G-Class off-road models, supplied in a number of variants. These include three- and five-door station wagons in 4x4 configuration, 4x4 cab-chassis utility vehicles, and purpose-built 6x6 models in both single- and dual-cab chassis. It also includes a specialised 6x6 surveillance and reconnaissance version.

Mercedes-Benz has employed New South Wales-based engineering firm G.H. Varley to provide a range of transport modules that will be fitted to many of the G-Class vehicles. These will serve a range of functions, including ambulance, command post, personnel carriage and general cargo.

The vehicle handover marks an important milestone in Project Overlander. An exhaustive tender process culminated in the signing of the historic contract in October last year. Today marks the start of the Mercedes-Benz G-Class off-roader's Australian military service, bringing with it a strong 30-year in service record.

Mercedes-Benz has a long history of supporting the Australian Defence Forces with field vehicles. For example, LA911B fire tankers were put into service with the ADF in 1978 and the unmistakeable Unimog off-roader commenced service in 1981. More recently, Mercedes-Benz coaches, vans and heavy-duty Actros 8x8 trucks have joined the ADF's ranks. The well-proven G-Class is the latest addition to this list.

The legendary Mercedes-Benz G-Class (G is short for 'Gelдndewagen' which means 'cross country vehicle) was first unveiled in 1979 and was designed with heavy-duty off-road terrain in mind. Ever since it has been adapted to changing customer requirements in the civilian and military markets. It boasted outstanding off-road capabilities right from the outset, but its all-terrain prowess has been continuously improved through the addition of cutting-edge electronic controls and powertrain technologies, proven in the toughest off-road applications. Its exceptional performance off the beaten track, its excellent towing capacity and balanced handling characteristics have resulted in the G-Class enjoying an extraordinarily long production career, which now stands at 30 years.

Army

## US Army Announces Independent Body Armor Review

Secretary of the US Army John McHugh announced today that the National Research Council (NRC) will perform an independent assessment of the Army's body armor testing, following last month's recommendation by the Government Accountability Office (GAO) for an independent review.

The NRC functions under the auspices of the National Academies, a private, nonprofit institution that provides science, technology, and health policy advice to the federal government and the public on critical national issues.

"We are committed to providing our warfighters with world-class equipment, and are confident that our body armor continues to defeat the threat to our soldiers," McHugh said. "The Army welcomes this independent review, and is grateful for the analysis and expertise of the National Research Council."

"I appreciated the opportunity to discuss this initiative

with Dr. Gilmore, the Department of Defense's director of operational test and evaluation, prior to its completion," McHugh continued. "As I said at the time, I fully endorse this analysis and pledge the Army will render its total cooperation."

Under an agreement between the National Academies and the director of operational test and evaluation (DOT&E), the Department of Defense's final independent authority on survivability testing of body armor, the NRC will perform an independent assessment of ongoing body armor testing. The purpose of the NRC assessment is to ensure that the Army maintains the highest standards for testing processes and protocols, thus addressing concerns raised by the GAO about current testing procedures.

"The continued partnership with DOT&E, the NRC, and the GAO will ensure the complete, accurate, and careful testing of body armor critical to ensuring soldiers' confidence in their equipment," McHugh said. "The Army is constantly refining and improving its testing processes and procedures, and we welcome additional expertise to help ensure that we continue to field the best body armor available."

Within the Army, the principal deputy assistant secretary of the army (acquisition, logistics and technology) has recently assigned a quality, process, and compliance executive who is responsible for oversight of process compliance across the acquisition community, and who is directly accountable to the Army acquisition executive. The highest priority for the compliance executive is the ongoing body armor ballistic testing by being conducted by the Army Test and Evaluation Command at Aberdeen Proving Ground, Md.

Army

## Making military vehicles interoperable

With the constant changing operational need for new weapons and armour on military vehicles, the MOD is working with industry to provide ever efficient solutions. Report by Cliff Caswell.

From the dawn of the tank, armed soldiers bulked out in full kit have had to endure an up-close-and-personal relationship with their neighbours.

In fairness, troops have rarely expected anything else. Throughout the past century, their metal battlefield workhorses have never been designed for comfort, with protection, mobility and overwhelming firepower the key concerns in battle.

But fast-forward to campaigns in Iraq and Afghanistan and the squeeze has become tighter than ever.

With a plethora of urgent operational requirements and upgraded armour to counter new threats, travelling around the 21st century theatre in heat of 50 degrees Celsius can become uncomfortable to the point of unbearable.

Fortunately, experts are working to alleviate the strains on infantrymen and crews. With means of transport becoming more sophisticated, the MOD's Force Protection Working Group has been collaborating with industry to cut the need for a vehicle's underpinnings to be changed each time it is upgraded with a new system.

The Generic Vehicle Architecture (GVA) project aims to create a single, standard electronic platform in new vehicles that will enable them to be easily adapted when the need arises, cutting the requirement for bulky, bolt-on extras:

"Interoperability is key at the moment," said Mark Stusnick, a combat systems and electronic warfare platform manager with Force Protection Inc - the company behind the Cougar chassis used for the Mastiff and Ridgback vehicles. "It is one of our main priorities and is at the forefront of what we are doing.

"These days you definitely need a modular approach to projects and to be able to introduce different sensors and weapons to your vehicle. When you are involved in a mission such as Afghanistan, you need to be able to plug in and play."

The Cougar 4x4 was chosen as the vehicle of choice for American defence contractor General Dynamics to showcase its GVA prototype. Called the Core Infrastructure Distribution System, technicians have plumbed in a digital network that brings a new dimension to armoured warfare.

Armed with a full suite of discrete cameras mated to compact screens, crews and dismounted soldiers have full sight of what is going on in the outside world around them. Weapons can be fired remotely with the hatch down, and data from vehicle systems can be instantly accessed to diagnose any problems:

"We have essentially looked at an end-to-end solution, even down to where the equipment is mounted," said Karl Pfister, an engineer with General Dynamics. "We have also made it easy to plumb new systems into the vehicle.

"The crew station has a virtual dashboard and the driver can see all around the platform via the cameras. The commander also has access to these different views and video from the weapon station, and can see the overall health of the vehicle."

As well as being able to plug into electronic systems, crews can use network-enabled capability to access other assets, including unmanned air and ground vehicles, and this is a key feature of the generic architecture concept provided by Thales. The mock-up of the company's Bushmaster vehicle has a raft of linked-up kit, including a package called Imagery-on-Demand.

Essentially a digital image compression and dissemination product, the feature allows operators in the vehicle to access high-quality video from sensors all over

the battlefield, whether they are mounted on aircraft or units on the ground.

Also linked in to the Bushmaster mock-up is the Thales Protector remote station, which can be fitted with a variety of weapons. And, once again, the common architecture makes for a much cleaner and more organised workspace for the crew:

"Soldiers now are certainly more switched on when it comes to technology," said Thales spokesman Paul Mottershead. "They are used to playing on their PlayStation 3s and mobile phones, so they are already familiar with network capabilities. Imagery-on-Demand is very clever stuff and fits naturally with them.

"The Protector weapons station features thermal imaging, has a laser range-finder and a colour day-camera. It is an extremely good system to engage targets with and you can fit a 7.62-calibre weapon, grenade machine gun or missiles."

Overwhelming firepower is certainly a key asset against the Taliban in Afghanistan. But so too is the need to deliver it precisely, and creating a standard vehicle platform that supports a wide variety of applications is a huge advantage.

To this end, the GVA initiative will be vital in future operations. With the benefit of battle-winning data, and the ability to plug into information sources from across theatre, soldiers will be able to find, fix and engage the enemy more effectively than ever before. And they'll even be more comfortable doing it.

Army

## Warthog vehicle arrives in UK for Afghan modifications

The first of 100 new Warthog vehicles, bought by the MOD to be used by British troops in Afghanistan's Green Zone, arrived in the UK yesterday to be prepared for operations.

Powered by a 7.2-litre engine that produces 350 brake horse power, the Warthog can wade through water while carrying up to 12 troops and offers improved levels of protection.

The highly agile, all-terrain vehicle will be able to climb steep gradients, cling to severe slopes, tackle vertical obstacles and cross wide trenches.

The MOD has bought more than 100 Warthog amphibious vehicles from Singapore Technologies Kinetics.

The first was unveiled yesterday, Thursday 19 November 2009, at Thales UK's new vehicle integration facility in West Wales as the company will be installing UK-specific kit to the vehicles.

This will include additional armour, specialist electronic countermeasures equipment and communication tools, before the vehicle is deployed to Afghanistan early next year.

Minister for Defence Equipment and Support, Quentin Davies, said:

"Warthog is an armoured beast of a vehicle that will carry troops to the heart of operations in the difficult terrain of Afghanistan's Green Zone. It can work in terrain where other vehicles find it difficult to operate.

"Warthog will provide improved protection to our troops on the front line and this marks a significant step forward in preparing this vehicle for our troops.

"I am delighted that Thales UK is able to contribute to that process here in the UK."

After the integration work the vehicles will undergo demanding trials to ensure Warthog is ready for the front line.

Head of Combat Wheels Group at Defence Equipment and Support, Brigadier Ian Simpson, said:

"Warthog has proven itself to be a very capable vehicle in its preliminary tests and trials.

"I am impressed by the high standards of engineering applied to this vehicle and the quality of the support package offered by Singapore Technologies Kinetics, which will give our troops higher levels of protection and mobility.

"This vehicle has been manufactured and shipped to the UK for radios and armaments to be fitted and integrated into the vehicle.

"The vehicle will then have to be fully tested and certified as safe to use before being issued to troops for pre-deployment training. Once these tests have been completed the vehicle will be given to our troops."

Warthog will come in four variants - a troop carrier, an ambulance, a command vehicle and a repair and recovery vehicle.

The ambulance variant will be capable of carrying casualties, medics and kit. Warthog's repair and recovery variant will be fitted with a crane and winch, and will have the capability of towing another Warthog vehicle back from the front line.

Warthog will succeed the Viking tracked amphibious troop carrier currently in service in Afghanistan. Viking will return to the UK to be refurbished but will remain in service with the Royal Marines.

The Warthog is a variant of the Bronco vehicles made by Singapore Technologies Kinetics and is just one of a fleet of protected patrol vehicles that were bought as part

of a J700m package of Urgent Operational Requirements announced by the MOD in October 2008.

The Bronco vehicle is currently in service with the Singapore Armed Forces.

Future Technologies

## Thales launches a comprehensive anti-terrorism offering combining security and defence solutions

Thales announces the launch of a counter-terrorism offer designed for both the security and armed forces. This offer is made up of a set of dual, modular and interoperable solutions designed to detect and neutralise the terrorist threat.

Thales' counter-terrorism offer is based on three of the Group's activities: surveillance and intelligence (sensors, data fusion and analysis, cyber surveillance, etc.), protection (sensitive site and frontier protection, security of Information Systems, etc.) and intervention (soldier communication systems, UAVs, tracking systems, etc.).

The risk of terrorist attack has grown over the past few years. Terrorism itself has changed significantly: new risks such as nuclear, biological, chemical and IT terrorism now exist in addition to the more "traditional" threats.

Faced with these constantly changing threats, Governments are having to adapt and rethink their counter-terrorism strategies and resources. With this offer, Thales supports these Governments in implementing and reinforcing their counter-terrorism facilities while taking their specific local needs into account.

"The fight against terrorism means Governments must be better organised and better prepared to react more quickly and efficiently in the face of a terrorist threat that is increasingly complex and difficult to understand," explains Pascale Sourisse, Senior Vice President of Thales, and Head of the Land and Joint Systems Division. "By launching this offer, Thales is taking concrete action by offering Governments coherent counter-terrorism solutions that take each country's specific problems into account. Thales has civil and military solutions that cover all the major stages of the fight against terrorism, from prevention facilities right up to intervention facilities."

Thales's counter-terrorism offer focuses on three main issues: improving the efficiency of existing structures and systems, developing new solutions in line with the country's requirements and offering specific services (training, In-Service Support, etc.).

Thales has drawn on its expertise and extensive experience in the defence and security fields to design its offer:

- Thales is an expert in site protection and capturing, transmitting and processing information. These are two fundamental components in the fight against terrorism.
- Its position in both the civil and military fields, coupled with its experience in system interoperability, equip Thales with the necessary "dual" approach. There is no doubt that the fight against terrorism demands that the civil security forces (the national police force, the Gendarmerie, etc.), the armed forces and the intelligence services are able to work together.
- Thales has the expertise required at all stages of the fight against terrorism: prevention, protection, intervention.
- Present in over 50 countries across the world, Thales has an unrivalled understanding of local problems, working in close collaboration with its clients at a local level so that it can deal with sensitive issues, while at the same time integrating matters pertaining to sovereignty (cryptology, existing sensitive systems, etc).

Contracts

## BAE Systems Secures $60.6 Million In Contract Modifications For Heavy Vehicle

BAE Systems has been awarded contract modifications from the U.S. Army Tank Automotive & Armaments Command (TACOM) for work on Bradley Fighting Vehicles, Multiple Launch Rocket System (MLRS) Redesigned Cabs, and M113A3 Ambulance vehicles. The total value of the contract modifications is $60.6 million.

"The Bradley and M113 Family of Vehicles play integral roles in the Army's Heavy Brigade Combat Teams," said Joe McCarthy, vice president and general manager of HBCT Systems for BAE Systems. "BAE Systems continues to support our troops overseas by maintaining and improving these vehicles to ensure soldiers are protected and able to complete their mission."

**Specifically, the contracts include:**

- $54.4 million for installation of survivability modifications on Bradley vehicles at Fort Hood, Texas, Fort Stewart, Georgia, Fort Bliss, Texas, Iraq, Kuwait and Germany. Modifications include an advanced fire suppression system, new seats, new ammunition restraints, and mounting provisions for armor tiles.
- $5.4 million for design updates to the Bradley Operation Desert Storm Situational Awareness vehicles to more closely parallel that of a Bradley A3 vehicle. This design work supports production deliveries to the National Guard in 2010.
- $414,000 for installation of the Auxiliary Power Unit (APU) and Environmental Control Unit (ECU) modification kits on the MLRS redesigned cabs in the field. The award also includes training to the MLRS crew and maintenance personnel.
- $350,000 for integration of the Mounted Soldier Systems (MSS) for the M113A3 Ambulance vehicle. The system includes cooling vests for crew members, helmet mounted display, wireless intercom improvements, and the Check 6 infra-red rear view system.

Work on these contracts will be managed out of the BAE Systems facility in Santa Clara, California and will be performed at other facilities including Fort Hood,

Texas, and York, Pennsylvania.

Defence Industry

## BAE Systems – Navistar Defense Team Successfully Completes Critical Design Review For Joint Light Tactical Vehicle Program

ARLINGTON, Virginia -- BAE Systems, through its US Combat Systems line of business, and teammate Navistar Defense, LLC have successfully completed the critical design review (CDR) for the U.S. multi-service Joint Light Tactical Vehicle (JLTV) program.

The CDR was completed as part of BAE Systems' 27-month JLTV Technology Development (TD) contract received in October 2008. The CDR marks the completion of the design process and the start of vehicle integration, assembly, test and checkout (IAT&C) activities to deliver test vehicles to the government by May 2010.

"This review demonstrates the BAE Systems-Navistar JLTV design is mature and balances program payload, protection and performance requirements," said Mark Signorelli, vice president and general manager of New Vehicles & Amphibious Systems for BAE Systems. "We are pleased that our design – built around the needs of the Warfighter – passed this significant milestone and we are looking forward to moving into the test and evaluation portion of JLTV's TD phase."

"Completing this review is a big event for the BAE Systems-Navistar team," said Kevin Thomas, director, new product, Navistar Defense. "As we head into the next portion of the TD phase, we will continue to enhance our offering to ensure our customer receives the best vehicle possible."

The BAE Systems-Navistar team has developed two JLTV prototypes for internal testing that have provided valuable information being used in the CDR. The company is incorporating this information to put forward the best possible offering that meets program requirements. The JLTV design also incorporates lessons learned from the U.S. Department of Defense's Mine Resistant Ambush Protected (MRAP) vehicle program and features the latest in lightweight, advanced armor and a V-shaped hull design to provide unmatched crew protection.

The team builds off the two companies' current leadership in armored and tactical vehicle development and support. Combined, the BAE Systems-Navistar team maximizes JLTV program value through proven capabilities, lean manufacturing and extensive worldwide logistics support. The team also includes Arvin Meritor, which is a leading designer and manufacturer of automotive advanced mobility systems and is the largest axle supplier to the U.S. military.

The BAE Systems-Navistar team draws on top talent from across the country. Sites participating in the development include: York, Pennsylvania; Ontario, San Diego and Santa Clara, California; Dearborn Heights, Sterling Heights and Troy, Michigan; Minneapolis, Minnesota; Johnson City, New York; Austin, Texas; Nashua, Hew Hampshire; Reston, Virginia; Melrose Park and Warrenville, Illinois; Fort Wayne, Indiana; West Point, Mississippi; Huntsville, Alabama; and Laurinberg and Aiken, South Carolina.

Defence Industry

## French government orders 16,454 FELIN soldier modernization systems from Sagem, Safran group

French defense procurement agency DGA has placed a new order with Sagem, a Safran group company, for 16,454 FELIN integrated equipment suites for the French army.

With this latest contract, France has now ordered a total of 22,588 FELIN systems from Sagem. The total value of the FELIN soldier modernization program, including development, engineering, production and initial support, is approximately one billion euros.

A complete, modular and unified system for infantry soldiers, FELIN delivers a significant improvement in protection, observation, communication, engagement, mobility and support functions for front-line soldiers. FELIN features an enhanced ergonomic design, plus better protection against modern small caliber weapons. The brand-new sighting system facilitates the neutralization of adversaries day or night. Because of its enhanced observation and positioning capabilities, FELIN also considerably improves night maneuvering and combat capabilities.

Sagem will deliver complete FELIN integrated systems to the French army, including a protective vest, combat gear, day/night sights for individual and crewed weapons, day/night vision and observation equipment, communications and information systems.

The FELIN system is now in production, and the first French army regiment will be outfitted with these systems in the second quarter of 2010.

This latest order confirms Sagem's European leadership in soldier modernization programs, a top priority for a number of nations. Sagem also contributes to the British program FIST*, the Swiss program IMESS, and is holding preliminary discussions for a number of possible export contracts.

Contracts

## General Dynamics Awarded USD$2.2 Billion Contract for Light Armored Vehicles

LONDON, Ontario –- The U.S. Army TACOM Life Cycle Management Command, in support of the U.S. Army Security Assistance Command (USASAC), has awarded a USD$2.2 billion contract to General Dynamics Land Systems-Canada for 724 Light Armored Vehicles (LAV) for a Foreign Military Sale (FMS).

Vehicle deliveries will begin in April 2011. General Dynamics Land Systems, the Canadian company's parent corporation, is a business unit of General Dynamics.

The contract was signed through the Canadian Commercial Corporation, a Crown Agency of the Canadian Government.

Dr. Sridhar Sridharan, senior vice-president of General Dynamics Land Systems-Canada, said, "We are pleased to be working once again with TACOM and USASAC in support of their Foreign Military Sales program. This contract now allows us to immediately start work on variant design and production readiness. We look forward to reaching the manufacturing portion of this contract which will help us bring stability to our production workforce."

Vehicles provided under this contract will be the LAV II version – a 300 horsepower 8x8 vehicle with a gross vehicle weight of up to 32,000 lbs (14,500 kg). The vehicles will be produced in 10 different variants.

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). More information on the company is available at www.gdlscanada.com.

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. More information about General Dynamics is available online at www.generaldynamics.com.

Contracts

## Chad Ministry of Defence orders additional 8x8 and 6x6 trucks from Renault Trucks Defense

The Ministry of Defence of Chad has once again chosen Renault Trucks Defense to expand its fleet.

The Ministry has confirmed an order of 64 units of fire tender Midlum and Kerax 8x8 and 6x6 equipped with tank and flatbed.

A first contract had been signed in January 2009 for 52 kerax.

Training And Simulators

## Meggitt Previews Advanced Reality Simulation

Industry leader delivers most realistic training scenarios outside of the battlefield Orlando, FL - Meggitt Training Systems Inc. (MTSI), manufacturer of the FATS(r) line of military training simulators, introduces a new standard in training technology with the launch of high-fidelity, advanced reality simulation.

Through the use of advanced CGI, troops practice identifying and engaging targets in a variety of environments, including MOUT and CQB urban scenarios. Simulated terrain and human assets are resolved via realistic graphics, and can be altered via an easy-to-use authoring station to create scenarios that reflect current battlefield situations. Used in combination with Meggitt's patented BlueFire(r) wireless smart weapons and tethered weapon simulators, the Meggitt simulation system also functions as an effective marksmanship trainer offering true ballistics and scoring capabilities for individual and squad-based drills.

Training applications include: mission planning/rehearsal; squad mission and crew-served weapons training; marksmanship practice and qualification; MOUT and CQB training; as well as engagement and judgmental skill building.

"We are excited to preview our recent advances in simulation training at the conference that draws the best and brightest in the industry," comments Mr. Tom Shirey, Director of Simulation Sales for MTSI. "Simulation experts and military officers will immediately see the advantages that set our product apart from the current 'serious game' training platforms in the industry. By combining the advanced reality simulation

platform with the superior capabilities of our FATS simulator line, Meggitt Training Systems remains the leader in the military training industry."

Defence Industry

## Doosan Infracore makes first shipment of K-21 infantry combat armed vehicles

The K-21, the world`s strongest infantry armed vehicle developed and produced with Korean technology, will be deployed to field sites for operation from the end of this month.

Doosan DST (CEO: Um Hang-seok) held a ceremony to mark the first shipment of K-21 infantry combat armed vehicles, which have been mass produced for the first time, at its Changwon Plant. The event was attended by more than 100 people, including high-ranking military officers and defense suppliers.

The K-21, whose development began in late 1999 in the hope of strengthening the Korean military's combat capability, entered into mass production this year after the operation, evaluation, and testing of pilot products at field sites. Weighing in at 25 tons, the K-21 is capable of transporting three crewmen plus one platoon of mechanized infantry troops, and can travel at speeds of up to 70 km per hour on land and 7 km per hour on water.

The vehicle is equipped with a 40-mm automatic cannon and a 7.62-mm machine gun as its key weapons. When a third-generation vehicle-to-tank missile is installed at a later date, it will transform it into the strongest armed vehicle of the 21st century, capable of attacking not only an enemy's armed vehicles but also tanks and helicopters.

The K-21 is also armed with Network Centric Warfare (NCW) capability, as it is fitted with a digital command/communication system that allows it to share information on the battlefield with other combat vehicles in conjunction with a terrestrial tactical C4I system. As such, it is expected to significantly enhance the Korean military's operational capacity in future warfare environments.

The K-21 has been evaluated as superior to the M2A3 of the U.S. and the BMP-3 of Russia, which are regarded as the world's strongest combat vehicles in this category, in terms of fire power, the capacity to manage battlefields, and mobility. Doosan DST plans to actively pursue the K-21's export to the Middle East, Southeast Asia, and Latin America by banking on its excellent performance and competitive price.

CEO Um Hang-seok of Doosan DST said, "We are very proud that the K-21 infantry armed vehicle, a state-of-the-art weapon that has been developed and produced exclusively by us, will take root as the mainstay of the Korean military's combat capability. We will seek to export the K-21 to many countries around the world, and develop Doosan DST into a leading global defense supplier that is representative of Korea."