

# Army Guide monthly



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## Future Technologies

### MTI MICRO Demonstrates MOBION® Units For Key Customer



MTI MicroFuel Cells Inc. (MTI Micro), the developer of the award-winning Mobion® micro fuel cell technology and a subsidiary of Mechanical Technology Incorporated, announced today it achieved its third quarter milestone of demonstrating a product-intent military portable power system with its Mobion®-30M product platform.

Officials from both MTI Micro and The Air Force Research Laboratory — Information Directorate ("AFRL"), one of MTI Micro's key customers in military applications, were present for the demonstration of a Mobion®-30M prototype — a system designed to produce potentially up to 600 Watt hours of run-time per cartridge which would allow airmen to power an average laptop over seven times longer than its current Lithium-ion battery. In addition, since the Mobion®-30M prototype can support up to 30 Watts of average power and over 100 Watts of peak power, it can power a wide-range of rugged electronic devices in the field. When compared to the number of batteries required for a 72 hour mission, one Mobion®-30M unit and two additional easy-to-swap, 100% methanol fuel cartridges are expected to weigh about one-half the weight of currently used batteries. For the same amount of power, deployed airmen would have to carry nine BA5590 batteries.

"The design of MTI Micro's Mobion technology enables us to create systems that are lighter weight and longer lasting in the field," said William Cook, Senior Engineer at Air Force Research Laboratory in Rome, New York. "This demonstrates the viability of fuel cell technology and MTI Micro's commitment to working with the Air Force to bring this new technology into the field for testing."

MTI Micro received a purchase order for fuel cell evaluation kits from AFRL earlier in the year. The purchase order includes the delivery of Mobion®-30M prototypes and fuel refills as well as initial training and technical support. AFRL intends to use these fuel cell evaluation kits in a program for the development of satellite communication terminals ("SATCOM"), which are portable high data rate transmission systems used in

communications by special operations forces. AFRL plans to integrate Mobion® into these terminals — providing weight reductions and mobility benefits if deployed into the field.

"We recognize what our military customers need — a rugged, light, compact, power-pack that can work in most operational environments, and run longer than batteries," said Juan Becerra, Vice President of Market and Business Development for MTI Micro. "We are focused on developing products that can meet those requirements and improve the mobility and effectiveness of our soldiers."

AFRL's interest in researching these fuel cells to power SATCOM systems is receiving Congressional attention and support. The conference report to the defense appropriations bill includes language that encourages AFRL to continue to develop and test hybrid fuel cell power systems for SATCOM applications and also encourages the Air Force to continue this important research as it pertains to current and future missions.

This release follows an earlier announcement by MTI Micro on achieving its milestone of exceeding the energy density of a Li-Ion battery with a consumer prototype designed to produce over 95 Watt hours of continuous run-time with the capability of being refueled instantly, allowing users to charge a number of portable electronic products including GPS systems, gaming devices, MP3 players, and digital cameras.



## Defence Industry

### PVI And RAFAEL Announce New Protected Combat Vehicle



North Charleston, SC -- Protected Vehicles, Inc. and RAFAEL Armament Development Authority, Ltd. announced today that they have developed a new and superior wheeled combat vehicle.

The core features of the GOLAN are extensive protection and lethal response to a myriad of potential threats; especially in an urban environment.

RAFAEL, a company created by the Israeli Ministry of Defense (MOD), enjoys a special relationship with the Israeli Defense Force, developing products according to the soldiers' specific requirements in the field. PVI partnered with RAFAEL to produce the GOLAN and has developed an excellent working relationship with RAFAEL, including the involvement of the MOD-Tank Program Management (MANTAK).

Protected Vehicles, Inc. has expertise in the areas of blast and ballistic protection, as well as automotive design and integration of U.S. off-the-shelf automotive components. RAFAEL brings expertise in armament development and defense systems, including remote control weapons, Insensitive Explosive Reactive Armor (IERA), and C4ISR integration.

PVI is delighted to be working with the MOD on a project of this importance to produce a vehicle for the U.S. military and the IDF in the fight against terrorism and combat operations. The GOLAN sets a new world standard in survivability and offensive capability in a wheeled vehicle by utilizing U.S. and Israeli advanced technologies. This is a breakthrough vehicle.

The GOLAN is PVI's second vehicle model released this month, preceded by their Light Protected Vehicle (LPV) which debuted at the Modern Day Marine show in Quantico, VA. The company expects two additional vehicle models to be released by the end of the year.

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### Contracts

#### US Army Awarded General Dynamics \$155 Million Contract for 109 Strykers



The U.S. Army has awarded delivery orders for a total of 109 Stryker wheeled combat vehicles from General Dynamics Land Systems, a business unit of General Dynamics. These three recent orders are valued at \$155 million and increase the Army's fiscal year 2006 Stryker procurement to a total of 518 vehicles.

Work will be performed in US and Canada, by existing General Dynamics employees. Work is expected to be completed by October 2008. Stryker, a family of eight-wheel-drive combat vehicles that can travel at speeds up to 62 mph on highways with a range of 312 miles, is the Army's highest-priority production combat vehicle program and the centerpiece of the ongoing Army Transformation. Stryker operates with the latest C4ISR equipment and an integrated armor package protecting soldiers against improvised explosive devices, rocket propelled grenades, and a variety of infantry weapons. Stryker's current combined fleet operational readiness rate is 96 percent with more than 6 million miles accumulated through two completed Operation Iraqi Freedom rotations. To date, General Dynamics has delivered more than 1,780 Strykers of the 2,691 included in the U.S. Army's plans for seven Stryker Brigade

Combat Teams.

Significantly lighter and more transportable than existing tanks and armored vehicles, Stryker fulfills an immediate requirement to equip a strategically deployable (C-17/C-5) and operationally deployable (C-130) brigade capable of rapid movement anywhere on the globe in a combat-ready configuration. Stryker Brigade Combat Teams have operated with "historically high" mission availability rates in Iraq since October 2003, demonstrating the value of a force that can move rapidly as a cohesive and networked combined-arms combat team.

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### Contracts

#### GD Awarded USD \$27M Contract to Supply RG-31 Mk5 Mine Protected Vehicles to the U.S. Army



LONDON, Ontario, Canada -- The U.S. Army Tank Automotive and Armaments Command (TACOM), in support of the Program Executive Office for Combat Support and Combat Service Support (PEO CS&CSS), has awarded a contract for USD\$27.2 million to General Dynamics Land Systems-Canada to provide 60 RG-31 Mk5 Mine Protected Vehicles, with an option for 34 additional vehicles. General Dynamics Land Systems, the Canadian company's parent corporation, is a business unit of General Dynamics (NYSE: GD).

The contract was signed through the Canadian Commercial Corporation, a Crown Agency of the Canadian Government. Under this contract, General Dynamics Land Systems-Canada will provide the program management while BAE Land Systems OMC of South Africa will manufacture the vehicles. Deliveries will occur from January to April in 2007.

The RG-31 Mk5 is the latest version of the highly successful RG-31 family. The Mk5 delivers a significant increase in power and payload to meet emerging requirements. In service with forces around the world, the RG-31 is a highly effective multi-role armored vehicle capable of a variety of military applications. Offering enhanced mine blast resistance, as well as protection against both improvised explosive devices and ballistic threats, these vehicles will be used by the U.S. Army in support of ongoing activities.

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### Contracts

#### ATK Receives More Than \$45M in New Medium-caliber Ammunition Business

Minneapolis, October 6, 2006 -- Alliant Techsystems (NYSE: ATK), the nation's leading supplier of medium-caliber training and tactical ammunition, has received two contracts, totaling more than \$45 million, to supply 30mm PGU-15 Training Practice and 25mm M792 High Explosive Incendiary rounds to the U.S. Joint Munitions Command and the U.S. Army Tank, Automotive and Armament Command, respectively. If additional options are exercised, the total value of the two contracts could approach \$60 million.



"Recent contract wins confirm that our decisions to relocate projectile and fuze manufacturing into a new, modern production facility, and to organizationally realign medium-caliber ammunition and medium-caliber chain guns under a single management structure were the right choices for our customer," said Mark DeYoung, President ATK Ammunition Systems. "Our customers now have a single point of contact to work with for all their medium-caliber ammunition needs. This direct interface creates a closer, more customer-focused relationship and offers the customer the best value in the industry."

U.S. Air Force A-10 squadrons will use 30mm PGU-15 ammunition to develop and maintain essential air-to-ground combat skills. The round's ballistic flight profile is identical to the High Explosive round used in a tactical configuration. The ballistic match allows pilots to use non-exploding training ammunition yet train in a realistic combat environment.

The 25mm M792 round is the primary medium-caliber round U.S. forces use to defeat light-armored vehicles, helicopters, additional crew-served weapons and other strategic targets. It is fired from the M242 Bushmaster Chain Gun, manufactured at ATK's facilities in Mesa, Arizona.

### Contracts

#### General Dynamics Won \$189 Million Contract for New LAV-A2 for U.S. Marine Corps



The U.S. Marine Corps has awarded General Dynamics Land Systems, a contract for \$189 million

for 151 new eight-wheeled Light Armored Vehicles (LAV-A2) in various configurations.

This award, which includes a \$50 million option for 394 LAV-A2 electric turret drives, modifies a contract awarded in February 2006 and brings the total value of the contract to \$317 million.

The LAV-A2 variants are improved versions of the Marines' Light Armored Vehicle series, which entered service in the 1980s and continues operational employment today. General Dynamics will deliver armored personnel, anti-tank, command and control, logistics and mortar variants beginning in July 2007. Work will be performed in USA and Canada, by existing General Dynamics Land Systems personnel. Work is expected to be completed by December 2008.

The Light Armored Vehicle A2 provides the Marine Corps' Light Armored Reconnaissance Battalion a mobile, agile and survivable system for conducting offensive and defensive operations in support of the Marine Air-Ground Task Force. The eight-wheeled amphibious armored vehicle is equipped with an improved suspension, fitted for enhanced armor protection, and features an automatic fire-suppression system for crew protection. Power is provided by a Detroit Diesel 6V53T diesel engine, developing 275 horsepower, coupled to an Allison MT653, six-speed (five forward, one reverse) automatic transmission. The four rear wheels drive the vehicle on a full-time basis, while eight-wheel-drive is selectable.

### Defence Industry

#### BAE Systems Features RG-33L - New Mine-protected Vehicle

BAE Systems has leveraged the combined strengths of its global land business to create its new 6x6 Mine-Protected Vehicle, to be unveiled Monday to military leadership at the largest U.S. industry event showcasing technologies and capabilities for the U.S. Army.

Drawing on decades of extensive expertise in developing, building, fielding and supporting mine protected vehicles and high-survivability combat vehicles, BAE Systems is featuring its RG33L at the Association of the U.S. Army Annual Meeting & Exhibition in Washington, DC on Oct.9-11.

BAE Systems is a world leader in developing and fielding high performance mine-hardened and mine-protected vehicles to armies around the world. Using the latest in design and modeling and simulation tools in South Africa and the USA, BAE Systems were able to rapidly prototype and produce the first RG33L. The company has proven capability in rapidly producing and fielding highly survivable vehicles for the military.

BAE Systems is offering its production-ready mine protected RG33L vehicle to meet urgent requirements. The company has multiple tactical wheeled vehicles in production now and skilled employees with mine hardened vehicle production expertise in low-cost,

low-risk U.S. production facilities.

The RG33 is a next-generation 6x6 mine protected vehicle that offers more volume under armor than any other C130 transportable mine protected vehicle and incorporates the latest designs in protecting against improvised explosive devices. The RG33L incorporates a monocoque V-shaped hull design leveraging knowledge gained in recent and ongoing conflicts.

RG33L builds on proven, fielded designs over a wide range of vehicles, and is a flexible, production-ready mine protected vehicle available today. BAE Systems brings more than 35 years experience in mine protected wheeled vehicle expertise, and decades developing highly survivable combat platforms for U.S. and allied militaries, and the RG33L leveraged developments at company locations in South Africa and the U.S.

The RG33L is equipped with a hydraulic ramp, a gunner's protection kit, a robotic arm, survivability gear, and dedicated space for equipment stowage. In addition, the vehicle is remote weapon capable and network enabled.

RG33L features additional systems to enhance survivability, such as modular add on armor kit provisions, TRAPP transparent armor that provides excellent visibility and situational awareness, and run-flat tires. The vehicle is equipped with multi-positional mine protected seating and air conditioning.

The vehicle delivers enhanced blast protection and may be equipped with a tailored armor package. RG33L is available with base protection against medium machine gun or small arms fire and mine blast protection at a level equal to or exceeding any fielded mine protected vehicle - and the platform is designed with a power train equipped to handle upgrades and enhancements.

The vehicle is mission configurable for Infantry Carrier, Ambulance, Command and Control, Convoy Escort, Explosive Ordnance Disposal and other roles, and is recoverable by another RG33L. The vehicle features on-board exportable power for C4I and other mission equipment.

announces two projects to armor MACK's Granite Truck and International Truck and Engine Company's (ITEC) MXT platforms.

Plasan recently acquired the automotive business of Vermont Composites of Bennington, Vermont - a leading manufacturer of carbon fiber products. The new company, Plasan USA, Inc., has become Plasan's US subsidiary.

For its global customers and partners, the name Plasan Sasa has become synonymous with armor. The company's solutions - which meet the strictest international standards - have been integrated by the Israel Defense Forces and by customers around the world including U.S. forces, NATO-related countries' forces, and Far East countries.

Plasan combines today's most advanced armor technologies in the creation of its engineering and ballistic solutions - including full protection against the threats encountered in evolving combat scenarios - IEDs, mines, assault rifles and artillery fragments. As part of Plasan's policy, solutions are designed in close cooperation with platform manufacturers - ensuring delivery of the most effective, comprehensive, and reliable armor solutions to meet the complex and difficult challenges faced by vehicles and crews. Plasan actively pursues cooperative development opportunities with international manufacturers, and supports armor engineering design for all types of platforms, including vehicles and personal armor equipment.

In cooperation with MACK Trucks, Plasan has created an armor solution for the Granite truck, providing ballistic protection for these logistical support vehicles and their crews against IED fragments and blasts. The easy-to-assemble, lightweight, and cost-effective solution includes a crane, enabling rapid two-person field assembly without the need for specialized tools. The platform is being exhibited at the Mack Trucks' stand at AUSA. In a second project, in cooperation with ITEC, Plasan has developed a prototype for the MXT platform. The company created a unique vehicle armor that entailed building the vehicle from scratch using a combination of the most advanced materials available - in order to achieve the highest protection against every possible threat. The sophisticated utilization of these materials significantly increases the overall survivability profile and optimally protects drivers and passengers against all types of 7.62 AP ammo, mines, and IED threats. Vehicles can be customized to include fire extinguishing and NBC (Nuclear, Biological, Chemical) protection systems, and are ideal for use in peacekeeping missions, urban warfare, homeland security and military applications. The platform is displayed at ITEC's stand at AUSA.

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## Defence Industry

### Plasan Sasa Announces Up-arming of MACK's GRANITE and ITEC's MXT Platforms



Plasan Sasa, a global leader in the field of combat-proven ballistic armor solutions used in a variety of applications - for land-based vehicles, air-based platforms, and personal protection -

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## Defence Industry

### BAE Systems Delivers First FCS Communications Payloads

BAE Systems has delivered the first

communications payloads composed of Joint Tactical Radio System Ground Mobile Radio Systems under the U.S. Army's Future Combat Systems (FCS) program. Delivery of the system to Boeing, FCS lead system integrator, is a major step in the Army's plans to deploy the software-programmable radios on current-force Abrams tanks, Bradley Combat Systems, and High Mobility Multipurpose Wheeled Vehicles (HMMWV).

As FCS communications systems integrator, BAE Systems provides electronic and mounting hardware, the radio's antenna, and integration services to deliver a complete Ground Mobile Radio system. The system is now undergoing integration testing at a Boeing lab in preparation for vehicle testing in spring 2007.

With this milestone achievement, Future Combat Systems has moved from delivering design to delivering hardware. It's an important step toward realizing the promise of FCS by delivering systems that will provide real benefits to the fighting forces.

Ground Mobile Radio is a joint services initiative to provide a family of software-programmable radios that provide reliable, multi-channel voice, data, imagery, and video communications for mobile military users. The system is designed for compatibility with future communications waveforms and links, and also for backward compatibility with existing systems.

Deployment on the Abrams, Bradley, and HMMWV platforms is among the Army's initial "spin-outs" of incremental FCS technologies to the current force.

For the war fighter, this system will provide significantly improved situational awareness and understanding. It will provide the network capability that is the backbone of FCS for both current-force platforms and also for future-force manned and unmanned ground vehicle and unmanned air vehicles.

with target accuracy equivalent to the delivery accuracies of today's precision-guided munitions, such as JDAM and Excalibur. The ASV vehicle will be provided to DRS Technologies, prime contractor for the Armored Knight and responsible for the integration of the sensor and Mission Equipment Package.

The total requirement for the program has been listed at 345 vehicles.

More than 450 ASVs have been deployed in the Global War on Terrorism in support of convoy protection and other combat missions. TM&L has delivered more than 535 vehicles to date.

The ASV is a 4x4 wheeled armored vehicle that offers exceptional crew protection through the employment of multiple layers of armor that provides defense against small arms fire, artillery projectile fragments, and land mines. This advanced armor is exceedingly lightweight and allows the vehicle to be able to "roll-on/roll-off" C-130 military transport aircraft. The ASV possesses superior mobility, agility, handling, and ride quality through the utilization of a four-wheel independent suspension system. Textron Marine & Land has equipped the U.S. Army Military Police version with a specially designed dual-weapon station that, unlike many other vehicles, enables the crew to load, reload and clear gun jams under full armor protection. With minor modifications and appropriate outfitting, ASV variants include operation as a scout vehicle, infantry personnel carrier, reconnaissance, command and recovery vehicle.



## Contracts

### U.S. Army Looks to New ASV

Textron Marine & Land, an operating unit of Textron Systems, a Textron Inc. company, has been awarded a contract modification by the U.S. Army Tank-Automotive & Armaments Command (TACOM) to manufacture 64 Armored Security Vehicles (ASV) for a new configuration called the M707 Armored Knight. Approximately \$35 million or 75 percent of the contract value has been awarded, pending final contract negotiations.

The Armored Knight is the ASV equipped with a sensor package that is used to locate and designate targets for indirect fire and laser guided weapons. The newly configured ASV will be used by Field Artillery Combat Observation and Lasing Teams (COLT) to carry out these missions.

The ASV is a light, agile wheeled combat vehicle with 360 degree armor protection against small arms fire, can withstand anti-tank land mines under any wheel and artillery burst fragments overhead.

The Armored Knight is the only system in production

## Term of the day

### Self-entrenching device



A small dozer blade attached to the front of an armored vehicle to enable the vehicle to dig itself in, in order to give better protection.

This device provide the armoured vehicle with the tactical advantages of being able to achieve protection from artillery fire and concealment.

The self-entrenching device usually has two positions – travelling and operating ones.

Traditionally, the Soviet T-series tanks were fitted with self-entrenching devices, while the designers of

Western tanks neglected this rather useful capability. Nowadays, however, some of the Western tanks are also fitted with self-entrenching devices.

## Defence Industry

### General Dynamics Awarded Contract to Support Future Stryker Upgrades



General Dynamics Land Systems, a business unit of General Dynamics, was awarded a \$3.3 million contract from the U.S. Army Tank Automotive Command TACOM for the initial phase of the design, engineering development, fabrication and test of a Power and Data Management Architecture (PDMA) to support future Stryker upgrades and improvements.

The PDMA contract will be conducted in three phases through FY2011, concluding with the complete system-level design, integration and testing for system validation and verification. This initial phase one contract is for 12 months, through September 2007.

Using state-of-the-art technologies, the full PDMA system will provide the Stryker with the power and processing capability needed to deploy enhanced integrated capability for current fielded and future production Strykers.

Stryker, a family of eight-wheel-drive combat vehicles, is the Army's highest-priority production combat vehicle program and the centerpiece of the ongoing Army Transformation. Stryker can travel at speeds up to 62 mph on roads with a range of 312 miles. Stryker operates with the latest C4ISR equipment and an integrated armor package protecting soldiers against improvised explosive devices, rocket propelled grenades and a variety of infantry weapons. Stryker's current combined fleet operational readiness rate is 96 percent with more than six million miles accumulated through two completed Operation Iraqi Freedom rotations.

The U.S. Army has ordered 518 Stryker wheeled combat vehicles in FY2006. To date, General Dynamics has delivered more than 1,780 Strykers to the U.S. Army.

Significantly lighter and more transportable than existing tanks and armored vehicles, Stryker fulfills an immediate requirement to equip a strategically deployable (C-17/C-5) and operationally deployable (C-130) brigade capable of rapid movement anywhere on the globe in a combat-ready configuration. Stryker Brigade Combat Teams have operated with "historically high" mission availability rates in Iraq since October 2003, demonstrating the value of a force that can move rapidly as a cohesive and networked combined-arms combat team.

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General Dynamics, headquartered in Falls Church, Va., employs approximately 81,900 people worldwide and had 2005 revenue of \$21.2 billion. The company is a market leader in mission-critical information systems and technologies; land and expeditionary combat systems, armaments and munitions; shipbuilding and marine systems; and business aviation. More information can be found online at [www.generaldynamics.com](http://www.generaldynamics.com).

## Future Technologies

### MoD launches new Technology Strategy

Defence Procurement Minister Lord Drayson today launched the Defence Technology Strategy (DTS), and unveiled the Ministry of Defence's plans for encouraging innovation to support the UK's front line forces.

The DTS sets out the areas of research and development the MOD views as the most important to the future provision of military capability to the UK's Armed Forces.

This strategy will help MOD and industry plan future investment in research and development (R&D). In particular, it allows us to identify clear R&D priorities, including those areas in which they believe it is important to maintain sovereign control, highlight opportunities for collaboration, and provide long-term support to the UK's science and technology skill base.

The DTS builds on the Defence Industrial Strategy White Paper published in December last year.

Lord Drayson unveiled plans for a 10million pound Competition of Ideas, that will encourage innovation by funding new research in prediction, protection, object recognition and networking.

He announced a separate Grand Challenge to innovators produce a system that can detect, identify, monitor and report a comprehensive range of physical threats in a complex urban environment.

Both of these challenges to innovators are designed to stimulate free-ranging innovation from the widest possible science and technology base.

They are seeking the best new ideas that can rapidly be turned into equipment for the British Armed Forces.

New programmes to support research by graduates into emerging technologies were unveiled. This initiative will encourage and support young people in science and technology careers and has the support of leading research and academic organisations in the UK.

## Defence Industry

### General Dynamics Deploys 'Command Post of the Future' Systems to U.S. Army

General Dynamics C4 Systems, a business unit of General Dynamics, has deployed more than 500 Command Post of the Future (CPOF) systems in support of the U.S. Army in Operation Iraqi Freedom. CPOF is part of a program to insert technology into the Army's Battle Command System (ABCS), a suite of networked digital systems that enable interoperability at all levels across the battlespace.

CPOF enables commanders and their staffs - more than 200 simultaneous users - to collaboratively develop operational plans, then monitor plan rehearsal and execution from geographically dispersed headquarters. The system runs on a commercial off-the-shelf computer workstation with three screens that provide a user-friendly, shared environment that rapidly displays and manipulates current operational information about friend and foe units. Information, including images and data, is seen in two and three dimensions across the distributed workspace.

By sharing situational awareness and collaborating with headquarters, warfighters can reduce their exposure to roadside threats.

After successful completion of an \$18 million contract with the Defense Advanced Research Projects Agency (DARPA) in June 2004 to field CPOF in support of Operation Iraqi Freedom, the program transitioned from DARPA to the Army in February 2006. CPOF is now managed by PM Battle Command which directs the program's deployment, sustainment and feature development for the Army. In May 2006, the U.S. Marine Corps awarded General Dynamics an engineering design contract to determine how CPOF could be integrated into its Combat Operations Centers. It was also used in the U.S. Air Force's Joint Expeditionary Force Experiment 06 and the U.S. Joint Forces Command Urban Resolve 2015 series of experiments in October 2006.



## Defence Industry

### BAE Systems to Manufacture Additional ILAVs

BAE Systems has received a \$7.8 million Foreign Military Sales contract modification to manufacture 20 additional Iraqi Light Armored Vehicles from the U.S. Army Tank-automotive and Armaments Command.

BAE Systems, as prime contractor, along with subcontractors Force Protection, Inc., and Spartan Chassis, Inc., will manufacture, test and provide logistics support for the Iraqi Light Armored Vehicles (ILAVs).

The 4x4 ILAV leverages proven designs and includes a V-shaped hull designed to deflect the force of

explosions away from passengers. The contract modification follows an initial order for 378 vehicles issued in May.

The total value of the indefinite-delivery/indefinite-quantity contract could reach \$445.4 million and 1,050 vehicles, if all options are exercised. Work on the contract is ongoing with deliveries scheduled to continue through May 2007. The first ILAV's were delivered to Iraq 90 days after contract award.



## Defence Industry

### General Dynamics and Rafael Unleash Thor in US



General Dynamics Ordnance and Tactical Systems (GD-OTS), a leading provider of ammunition, explosive ordnance disposal (EOD), and ordnance DEMIL products and services has partnered with RAFAEL Armament Development Authority in Israel to bring a dual mode, standoff ordnance neutralization system into the US.

Thor combines a high-energy laser and M2 12.7mm machine gun on a stabilized weapons pedestal with a remote operator control station and day/night sighting sensors to provide a general purpose, standoff ordnance neutralization capability. Thor provides a wide range of combat utility and freedom of movement capabilities that the maneuver force commander requires.

Thor has demonstrated combat effectiveness in operational engagements bringing an additional precision fire gun platform to the fight, while at the same time filling a unique tactical mission role. The system will be used by military combat engineers and EOD teams to neutralize explosive hazards.

Thor is modular, designed for field installation on tactical vehicles and powered by vehicle prime power. The directed energy from the laser is capable of rapidly clearing unexploded ordnance and defeating IEDs by inducing a low-order burning or deflagration reaction in the explosive fill at significant safe stand-off ranges. The directed energy from the laser may also be used to ignite combustible materials, as a standoff cutting torch, and for other combat purposes. The kinetic energy from the 12.7mm bullet fired by the M2 functions as a standoff disrupter, destroying fuzing, thick-cased munitions and booby traps, also enabling distancing explosive hazards away from the force route. The M2 machine gun ultimately provides accurate, direct fire upon enemy



forces and targets in either an offensive or defensive role.

Developed by Rafael Armament Development Authority, Ltd supported by the Israeli Ministry of Defense (IMoD) and the US Anti-Terrorism Technical Support Working Group (TSWG), Thor is now available for sale and integration in the United States by GD-OTS through its teaming agreement with Rafael.

General Dynamics Armament and Technical Products, a business unit of General Dynamics, was awarded an \$18.4 million contract from U.S. Army Tank Automotive Command, for the production of M2HB machine guns. Total contract value could reach \$27.6 million if all options are exercised.

The M2HB crew-served 12.7mm machine gun features a rate of fire of over 450 rounds per minute and a maximum effective range of 2,000 yards. Its high level of lethality and versatility has made it the world standard in its class.

Production work will be performed at General Dynamics Armament and Technical Products' Saco, Maine, facility, which has manufactured the M2 Machine Gun since 1979. Program management will occur at the company's Burlington, Vt., facility.

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### Defence Industry

#### Light-applique armour to be fitted to Mastiff Protected Patrol Vehicles



QinetiQ subsidiary Foster-Miller Inc, has announced that its LAST(r) Armor division has received a \$10 million subcontract from Force Protection Industries Inc, to supply add-on armour for 85 vehicles ordered by the UK Ministry of Defence (MoD). The new transport vehicles, to be called Mastiff Protected Patrol Vehicles (PPVs) are designed to help protect British forces and are expected to be delivered over the next six months.

Foster-Miller's Light-applique Armour Systems Technology (LAST(r) Armor) was developed in the 1990s to further protect military vehicles from hostile fire. The armour is attached with proprietary, high-strength Velcro(r) hook-and-loop fasteners that are five times stronger than conventional Velcro. No cutting, welding or drilling is required to install the armour.

LAST(r) Armor has been used on American, Canadian and French ground vehicles and is also used to reinforce plane cockpits by the Air Forces of ten nations around the world. LAST(r) Armor division has also recently introduced its own line of spall liners to the market. Spall liners provide additional protection from ballistic fragments such as those created by explosions of IEDs (improvised explosive devices).

The Mastiff PPV (a variant of the US Cougar) meets the MoD's requirement for a well protected, wheeled patrol vehicle with a less intimidating profile than tracked vehicles like Warrior or FV430. In addition to raising armour level beyond the standard, the vehicles will be customised with essential Bowman radios and electronic counter-measures.

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### Defence Industry

#### General Dynamics Awarded \$18 Million contract for Production of M2HB Machine Guns