

# Army Guide monthly



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## Defence Industry

### Thales' JTRS Handheld Radio Selected for U.S. Military Service



Thales Communications, Inc., has been awarded a firm, fixed price, indefinite-delivery/indefinite-quantity (IDIQ) contract to provide its AN/PRC-148 Joint Tactical Radio System (JTRS) Enhanced Multiband Inter/Intra Team Radio, or JEM, system to all services of the U.S. Military.

The consolidated, interim, single-channel, handheld radio (CISCHR) award was the result of a competitive procurement. The JTRS Joint Program Executive Office (JPEO), through the Space and Naval Warfare Systems Command (SPAWAR) procurement authority, has consolidated handheld radio purchases for the U.S. Department of Defense, significantly reducing unit costs and allowing all participating agencies to purchase JTRS equipment. Under this IDIQ contract, Thales will compete for future awards of formal delivery orders, which will ultimately determine contract value. CISCHR has a one-year contract period with four additional one-year options.

Designed, developed, and manufactured under a U.S. Department of Defense program of record, Thales' AN/PRC-148 JEM has been tested, evaluated, and validated by the U.S. Government. The JEM's powerful Software Communications Architecture is capable of hosting future waveforms, making it both an interim and long-term solution in the battlefield. Further, the JEM supports cryptographic modernization, enabling secure communications through a future-proof, software-based approach. An evolution of the AN/PRC-148 Multiband Inter/Intra Team Radio, or MBITR, the JEM leverages the proven platform that has been serving American warfighters for years in Afghanistan, Iraq, and other areas throughout the world.

As part of this contract, Thales will also be supplying its dual radio AN/VRC-111 Vehicle Adapter Amplifier (VAA) and its Base Station. The VAA consists of two Thales Vehicle Adapters, two JEM handheld radios, and a SINCGARS interface tray. The VAA provides multiband, multimode capability beyond basic SINCGARS and offers unique, one-second, cable-free radio dismount that enables a seamless transition from mounted to dismounted operations. The power-boosting

Base Station, designed for fixed command center operations, supports and maintains all functionality of the JEM and Vehicle Adapter. The JEM, VAA, Vehicle Adapter, and Base Station are part of a complete system solution for the warfighter that also includes a self-contained Tactical Repeater for range extension; compact, rugged Man Portable System for dismounted operations requiring higher power output; and a complete line of accessories.

## Contracts

### BAE Systems Receives \$213.9 M Contract from U.S. Marine Corps for 441 Mine Resistant Ambush Protected Vehicles



BAE Systems has received a \$213.9 million delivery order from the U.S. Marine Corps for 425 Category I 4x4 and 16 Category II 6x6 Mine Resistant Ambush Protected (MRAP) Vehicles.

The highly survivable RG33 4X4 provides an enhanced degree of mission flexibility. The RG33 series offers both improved survivability and more volume under armor than any other mine protected vehicle and incorporates the latest designs in protecting against improvised explosive devices.

The delivery order also includes an additional 16 Category II MRAP 6x6 vehicles configured as ambulances and an additional variant. The RG33L MRAP ambulance vehicle can accommodate several litter and ambulatory patients via a novel litter lift system. The vehicle also provides space for a medic work station and key medical equipment.

This highly mobile and survivable vehicle will allow Marines and soldiers to receive immediate medical care in a combat environment.

## Defence Industry

### SOE KMDB Is Authorised to Export Armoured Vehicles Without Mediation of Specialised Government Agencies

Ukraine's leader in the development and production of armoured vehicles and artillery systems – State-Owned Enterprise Kharkiv Morozov Machine Building Design Bureau – has been included into the list of Ukrainian enterprises that are allowed to export defence-related products without mediation of Ukrainian specialised government agencies.

The SOE KMDB is well known for its developments in the area of armoured vehicles. This year the Design

Bureau will celebrate its 80th anniversary. During these years, the enterprise managed to create world-known vehicles – T-34, T-54, T-64, etc.

Nowadays the product range of the SOE KMDB includes armoured vehicles of various types - Dozor-B (4 x 4) and BTR-4 (8 x 8) armoured personnel carriers, Oplot and Yatanan main battle tanks, heavy infantry fighting vehicles, armoured repair and recovery vehicles, etc. The enterprise also designs and produces a number of remote-controlled weapon stations that are fitted with armament with calibre of 12.7 to 30 mm, anti-tank guided missiles and grenade launchers (various options are available). Besides, the Design Bureau has a wide experience in upgrading armoured vehicles as well as developing and producing various training aids (computer-based training simulators and operating models).



## Robots

### iRobot Receives U.S. Military Orders Totaling \$17.5 M



iRobot Corp. announced it has received two delivery orders totaling \$17.5 million for iRobot PackBot robots for the U.S. military.

The U.S. Army Program Executive Office for Simulation, Training, and Instrumentation (PEO STRI), on behalf of the Robotic Systems Joint Project Office, and the Naval Sea Systems Command (NAVSEA) both placed orders for iRobot's combat-proven military robots. iRobot expects to complete delivery by the end of January 2008. The initial PEO STRI contract was awarded under the Naval Air Systems Command's (NAVAIR) contracting authority. PEO STRI has recently established its own contracting authority, and this contract was transitioned under that authority.

PEO STRI placed an order valued at more than \$8.6 million for 14 iRobot PackBot robots with ICx Fido Kit and five iRobot PackBot EOD robots, plus spare parts. The PackBot robots will ship with iRobot's new game-style hand controllers for faster training and easier operation in the field. This order brings the total PEO STRI orders to date to approximately \$36 million. Under the terms of the existing Indefinite-Delivery/Indefinite-Quantity (IDIQ) contract, PEO STRI could order up to the full \$64.3 million value in robots, spare parts, training and repair services.

In addition, NAVSEA ordered 60 iRobot PackBot MTRS robots and spare parts valued at \$8.9 million for Joint Service Explosive Ordnance Disposal use, bringing NAVSEA's total orders to date to more than \$74 million. Under the terms of NAVSEA's previously existing IDIQ contract, the military could order up to the full \$264 million value in robots, spare parts, training and repair services.



## Defence Industry

### Maintaining Bradley Fleet Rivals Spending on New Light Tracked Vehicles Worldwide



The international market for light tracked vehicles remains a highly competitive and dynamic environment. In its annual analysis "The Market for Light Tracked Vehicles," the Forecast International Weapons Group projects that the market will produce over 13,600 light tracked vehicles, worth nearly \$28.308 billion, through 2016.

Dean Lockwood, a weapons systems analyst at Forecast International, notes that new production of the top two high-end vehicles - the Expeditionary Fighting Vehicle (EFV) and the Igel/Puma - will account for only 9.34 percent of all production during the forecast period. Yet, he estimates these two programs will provide 62.45 percent of the total value of the light tracked vehicle market through 2016. "For most nations, the expense associated with the modernization and retrofit of high-end light tracked vehicles pales in comparison with the prospect of new procurement," Lockwood said.

Through FY13, the U.S. Army intends to spend over \$5.89 billion on M2/M3 Bradley Fighting Vehicle upgrades. This level of armor system modernization (ASM) spending clearly indicates a long-term investment in the U.S. Army's M2/M3 Bradley fleet, well beyond the anticipated fielding of the Future Combat Systems (FCS) family of manned ground vehicles in FY14. Indeed, according to the FY08/FY09 budget request documentation (February 2007), the U.S. Army now intends to maintain the Bradley Fighting Vehicle System in active service for another 45 years. This U.S. Army investment in the maintenance and upgrade of the existing Bradley fleet is equivalent to about 20.8 percent of the value of all new-production light tracked vehicles scheduled to roll out worldwide through 2016.

"While transparent to this market analysis, maintenance of the existing Bradley Fighting Vehicle



fleet in U.S. Army service is effectively the third most valuable light tracked vehicle program on the international market," Lockwood stated.



### Defence Industry

## BAE Systems Delivers First Lightweight RPG Protection Kits for RG-31



BAE Systems has installed the first two LROD(tm) rocket-propelled grenade (RPG) protection kits on U.S. Army RG31 and RG31A1 mine-protected vehicles.

LROD is a lightweight, modular bar-armor system composed of an aluminium alloy that provides protection against RPGs without compromising the operational capabilities of the vehicle. Weighing less than half of comparable steel designs, LROD bolts onto the vehicle without welding or cutting, and can be repaired in the field.

The Army will procure 12 additional LROD kits for delivery this year to operational units in response to an Army Operational Need Statement. The Army has expressed interest in procuring additional kits for the entire RG31 and RG31A1 fleet. The RG31 was developed by BAE Systems in South Africa.

The LROD system provides lightweight, low-cost RPG protection that is easily adapted to virtually any armored vehicle.

LROD was developed in response to increased threats from rocket-propelled grenades in Operations Iraqi Freedom and Enduring Freedom. It also is a candidate for use on the DoD's mine-resistant, ambush-protected family of vehicles.

BAE Systems originally developed the system as part of a fast-response Defense Advanced Research Projects Agency program to provide RPG protection for high-mobility multipurpose wheeled vehicles. Army officials conducted more than 50 live-fire tests to validate the performance and optimize the engineering design. The modular design proved effective at preserving the integrity of the vehicle and safety of the crew in those tests.

Based on its success with Army and Marine Corps combat units, BAE Systems is designing LROD kits for other combat vehicles, including the Light Armored Vehicle BV-206 and the Amphibious Assault Vehicle both manufactured by the company. Small boats also could be protected by the LROD system.



### Term of the day

## Hussar

Hussar (original Hungarian spelling: huszár, plural huszár, Polish: Husaria) refers to a number of types of cavalry used throughout Europe since the 15th century. Some modern military units retain the title 'hussar' for reasons of tradition.

Hussar armament varied over time. Until the 1600s it included a cavalry sabre, lance, long wooden shield and, optionally, light metal armour or simple leather vest. Their usual form of attack was to make a rapid charge in compact formation against enemy infantry or cavalry units. If the first attack failed, they would retire to their supporting troops who re-equipped them with fresh lances, and then would charge again.

Polish heavy hussars were much more heavily-armed. Apart from the Polish sabre and the lance, they were usually also equipped with two pistols, a small rounded shield and koncerz, a long (up to 2 metres) yet light sword used in charge when the lance was broken. Also the armour became heavier and with time it was replaced by shield armour.

Unlike their lighter counterparts, the Polish hussars were used as a heavy cavalry for line-breaking charges against enemy infantry. The famous low losses were achieved by a unique tactics of late concentration. Until the first musket salvo of the enemy infantry, the hussars were approaching relatively slowly, in a loose formation. Each rider was at least 5 steps away from his colleagues and the infantry using still undeveloped muskets simply could not aim at any particular cavalryman. Also, if hussar's horse was wounded, the following lines had time to steer clear of him. After the salvo, the cavalry rapidly accelerated and joined up the ranks. At the moment of clash of the charging cavalry with the defenders, the hussars were riding knee-to-knee.

Hussars of the Polish Commonwealth were also famous for the huge 'wings' worn on their backs or attached to the saddles of their horses. There are several theories trying to explain the meaning of the wings. According to some they were designed to foil attacks by Tatar lasso; other theory has it that the sound of vibrating feathers attached to the wings made a strange sound that frightened enemy horses during the charge. However, recent experiments carried over by Polish historians in 2001 did not support any of the theories and the phenomenon remains unexplained. Most probably the wings were worn only during parades and not during combat, but this explanation is also disputed.



### Future Technologies

## BAE Systems to Develop Seeker for Multiple Kill Vehicle Program

Nashua, New Hampshire, -- BAE Systems will

develop and test a key component of the U.S. Missile Defense Agency's Multiple Kill Vehicle payload system.

The company will produce, test, and integrate the system's carrier vehicle seeker for the captive carry testbed under a two-year, \$6.3 million contract from Lockheed Martin Space Systems Co.

In the event of an enemy missile launch, an interceptor equipped with this payload will track down the target using data uplinked to the BAE Systems seeker aboard the carrier vehicle. Once outside the earth's atmosphere, the seeker will acquire and track all threat objects, including the missile and any countermeasures deployed to disrupt U.S. defenses. The carrier vehicle will then dispense a large number of small "kill vehicles", guiding them to destroy the targets designated by the seeker.

"This is a new midcourse interceptor capability for the Missile Defense Agency that lowers the cost per kill and increases the probability of engagement success," said Kevin Ezzo, BAE Systems Ballistic Missile Defense program director.

"Success in this key technology demonstration will keep the Multiple Kill Vehicle program on the path of delivering earliest operational capability to the warfighter," said Rick Reginato, Lockheed Martin program director in Sunnyvale, California.



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### Defence Industry

#### Elbit Systems awarded \$55 Million contracts in Europe



Haifa, Israel, -- Elbit Systems Ltd. announced today that it was awarded \$55 million contracts in Europe.

In Slovenia, it signed a contract to supply overhead remote controlled weapon stations and unmanned turrets as well as other electronic and electro-optical systems and components for the Slovenian Armored Vehicle Program. Elbit Systems' portion of the Program is valued at approximately \$ 40 million, with deliveries scheduled to take place through 2011.

Elbit Systems' selection is pursuant to cooperation with Patria AMV, owned by the state of Finland and the European Aeronautic Defense and Space company EADS N.V. Patria, together with the Slovenian company Rotis d.o.o, was selected by the Slovenian Ministry of Defense to be the prime contractor for the supply of the Slovenian Armored Vehicle Program. The Program covers 135 vehicles.

Elbit Systems' portion of the Program includes laser detection systems and the delivery, integration and installation of 30mm Unmanned Turrets and 12.7/40 mm Overhead Remote Controlled Weapon System (ORCWS) onboard Patria AMV 8X8 vehicles.

In Romania, Elbit System was awarded lately a contract to supply unmanned turrets and electro-optic systems valued at approximately \$15 million, with deliveries scheduled to be performed over the next three years. The Romanian Government selected Mowag GmbH, of the General Dynamics European Land Combat Systems Group, to be the prime contractor in this project, and it will supply the Piranha III vehicles for the program. Elbit Systems' portion of the program includes the delivery of 12.7 mm unmanned turrets and various electro-optic and electronic subsystems, including the DTV- Driver Thermal Viewer and other systems. The majority of the work will be performed in Romania by Elbit Systems' subsidiary Elmet International srl., with the collaboration of the Romanian company Pro-Optica S.A.

Bezhael (Butzi) Machlis, Corporate V.P. and General Manager of Elbit Systems' C4I & Land Systems Division, said: "The selection of our systems for the projects attests to our ability to provide a completely integrated configuration for fighting/patrol/surveillance vehicles, including Unmanned Turrets equipped with missiles fire control and threat detection systems. Machlis added: "We are proud to be selected to take part in those important projects. The selection of our unmanned turrets constitutes a breakthrough in an emerging international market emanating from a shift in the modern battlefield. "



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### Defence Industry

#### Smiths Detection Awarded Initial Contract to Supply M4 JCAD, the U.S. Military's New Generation Chemical Agent Detector



Edgewood, MD -- Smiths Detection, part of the global technology business Smiths Group, today announced that its Military unit has been awarded a \$3.9 million firm-fixed price contract to supply the U.S. Department of Defense with lightweight detectors under its Joint Chemical Agent Detector (JCAD) program.

The M4 JCAD selected is based on the Smiths Detection Lightweight Chemical Detector (LCD), widely adopted by military forces globally. It is designed to help

save the lives of troops by automatically detecting, identifying and quantifying both chemical warfare agents and toxic industrial chemicals. The advanced, non-radioactive chemical point detector can be worn by soldiers or mounted in mobile platforms such as vehicles or robots.

"For both the Department of Defense and Smiths Detection, this initial production contract marks the start of one of the most important chemical agent detection equipment programs ever," said Stephen Phipson, Group Managing Director, Smiths Detection. "With the growing threat from toxic industrial chemicals, evidenced by recent attacks, we feel confident that our advanced technology in the M4 JCAD will provide US troops with an added layer of protection."

The Low Rate Initial Production contract awarded to Smiths Detection, which includes ancillary equipment, may be followed by a Full Rate Production decision that could take place in early 2008, with potential orders for up to 54,000 additional M4 JCAD units.

"This result exemplifies our commitment to providing high-quality solutions and the dedication of our team to provide the U.S. military with the most capable and technologically advanced chemical detectors," commented Damian Tracey, President, Smiths Detection-Military.

Saco, Maine, facility.

## Defence Industry

### M777 Lightweight Howitzer Update Gives More Range and Accuracy



Arlington, Virginia -- The latest version of BAE Systems' M777 Lightweight 155mm Howitzer is now cleared to fire a longer-range and more accurate projectile following official approval.

The receipt of a Full Material Release for the A2 version from the Commanding General of the U.S. Army TACOM Life Cycle Management Command means that the necessary upgrades can be issued to U.S. Army and U.S. Marine Corps units.

Full Material Release means that the system meets all safety and operational requirements for fielding. This is achieved only after thorough testing of the system and its software to strict test regimes.

The A2 version of the howitzer incorporates a software update that enables the howitzer to program and fire the M982 Excalibur Guided Projectile. The Excalibur brings precision fire to field artillery at all achievable ranges. The Excalibur projectile will give the M777A2 howitzer a maximum range of 40km with accuracy on target within 10 meters. This is an increase over the current range of the howitzer of 30km using unguided munitions.

The M777A2 version of the howitzer will be the version issued to all U.S. Army and USMC units and previously-equipped M777A1 howitzer units will receive a software upgrade to bring their systems to A2 standard. Both the 11th Marine Regiment and the 10th Marine Regiment have received the A2 version. The 3rd Battalion, 321st Field Artillery Regiment, at Fort Bragg, North Carolina, is currently undergoing initial fielding of the M777A2 for the U.S. Army. The 2nd Battalion 11th Field Artillery Regiment at Schofield Barracks, Hawaii was equipped with M777A1 howitzers in January 2007. They will be converted to the A2 version later this year.

## Contracts

### General Dynamics Awarded \$13 Million Contract for MK47 STRIKER40 Weapon System



Charlotte, N.C. -- General Dynamics Armament and Technical Products, a business unit of General Dynamics, has been awarded a \$13.2 million option from the U.S. Government for production of the MK47 MOD 0 Weapon System.

The award is part of a five-year Indefinite Delivery Indefinite Quantity contract awarded in June 2006 and brings the total contract value thus far to \$46.3 million.

The MK47, also known as STRIKER40, is a lightweight grenade launcher capable of firing airbursting munitions. Its integrated fire control system provides a decisive technological advantage over enemy forces equipped with older crew-served weapons. Program administration will be conducted at General Dynamics' Vermont-based Burlington Technology Center, with production occurring at General Dynamics'

## Defence Industry

### C4I the New name for Redflex Communications Systems

Market leader Redflex Communications is finishing a very successful financial year by announcing a new identity to complete the business' move from Redflex Holdings to The Longreach Group.



The new brand, C4I, clearly identifies the company as a world leader in the design, integration and support of mission critical intelligent command and control, communication and computing solutions for defense, public safety and homeland security markets.

Last financial year C4I successfully delivered systems to the USAF, NATO, RAAF, Danish police and FEMA clearly indicating the industry acceptance of the C4I IP enabled systems. Capabilities such as radio control and monitoring over existing IP networks and the ability, for example, to conference headquarters staff, field commanders and operations centers are redefining command and control solutions in many different markets.

The C4I R&D team is continuing to increase the performance and capability of IP applications in C4 environments through experience and customer feedback.

C4I is very well positioned for growth in FY2008 with not only a new name, but new IP enabled products and systems that meet and adapt the ever changing communications technologies. C4I continues to grow its international reference sites with more installations in America, Europe and Asia. The C4I systems continue to support established legacy infrastructures while offering all the benefits of IP based technologies.

C4I looks forward to a bright future supporting the defense and civil industry with innovative and inter-operable command and control, communications and computing solutions.

#### ABOUT C4I

For nearly 20 years, C4i has specialized in delivering standard-setting communication solutions for mission-critical military and government customers around the globe. C4i is based in Melbourne, Australia and Reston, Virginia, USA, and is one of the publicly traded LongReach Group family of companies. A company with a global reach, C4i has the heritage, the knowledge, the commitment and the experience to adapt revolutionary solutions to your critical mission needs.



#### Contracts

### KMW Upgrades Norwegian Bridgelayers



Krauss-Maffei Wegmann (KMW) has received a contract from the Norwegian Ministry of Defence for the upgrade of its LEGUAN bridgelaying systems.

A 9 Mio. EUR contract was recently signed by the Director of the Norwegian Defence Procurement

Agency, Brigadier General Asle J. Kjelsberg, and KMW Managing Director, Dr. Martin Menrath.

These systems produced by KMW and successfully in service since 1988 are scheduled to go through a comprehensive modernisation programme that will be specially focused on the fitment of a new electronic control system for the laying equipment. This will keep the Norwegian armed forces at the latest state of the art in this capability segment and will ensure logistic support for the bridgelayers.

#### LEGUAN

The LEGUAN bridge has a length of 26 metres and is designed for MLC 70. The bridgelaying operation is fully automatic and, as for the recovery operation, requires less than 8 minutes with the Norwegian wheeled vehicle version. The numerous user countries of the LEGUAN, in addition to Norway, include Finland, Singapore, Greece, Belgium, the United States, South Africa and Spain.



#### Robots

### Awarded Contract to Develop an Immersive UI with Advanced Controls for Next Generation

LOGAN, UTAH – Autonomous Solutions, Inc., (ASI), a designer and manufacturer of unmanned vehicle systems, software, and components for industrial and military clients, today announced it has been awarded a two-year development contract from the Naval Explosive Ordnance Disposal Technology Division (NAVEODTECHDIV) in Indian Head, MD, to develop an advanced 3D visualization and tactile feedback system that will improve the ability of EOD technicians to use robotic manipulators when handling and manipulating suspicious objects in the field.

NAVEODTECHDIV is the Joint Service activity supporting all armed services for Explosive Ordnance Disposal (EOD).

The system will be deployable on both the next generation EOD robots and as a retrofit package for currently deployed platforms such as the Talon® and Packbot®. The system will use 3D sensing to immerse the user in the most realistic representation of the environment possible. This visualization, along with advanced manipulator control capabilities, will enable the user to quickly and intuitively address the threat. This is in contrast with the current method of using purely two dimensional data from cameras mounted on the robots, which results in a loss of depth perception making object handling difficult for bomb techs and robot operators.

“I’m thrilled that we have been awarded a significant development contract with a government organization that has had such an influential role in saving lives in Iraq”, says Mel Torrie, CEO of Autonomous Solutions. “This provides us with the opportunity to leverage a considerable amount of the technology we have developed in 3D and advanced manipulator controls for our Mobius™ software. Mobius™ has been developed

in our industrial division for tasks like semi-autonomous backhoe operation in construction and mining as well as agricultural and other commercial markets. I'm excited that we will be able to leverage this technology for military applications that save lives."

The ultimate goal of this program is to allow users in dangerous situations to quickly and accurately deal with potentially hazardous items so they can exit the area as soon as possible. Integrating these new capabilities onto the bomb disposal robots through ASI's JAUS standard communication interface will enable rapid fielding of these potentially life saving capabilities.

#### **About Autonomous Solutions, Inc.**

Autonomous Solutions is a market leader in vehicle automation, autonomous operations, and JAUS implementation. ASI designs, programs, and manufactures unmanned vehicles for a variety of military and commercial applications. ASI is one of the largest privately held robotics-focused companies in the world—employing world class computer, electrical, and mechanical engineers and support staff.



### **Defence Industry**

#### **PVI ANNOUNCES NEW PROTECTED COMBAT VEHICLE**



North Charleston, SC- Protected Vehicles, Inc. is pleased to announce development of its newest wheeled combat vehicle The Protector.

Designed to improve upon the shortcomings encountered by the current HMMWV in operational theatre during missions and patrols in Iraq and Afghanistan, The Protector offers advanced armor solutions to threats from both improvised explosive devices (IEDs) and the more recent and devastating explosively formed penetrators (EFP) utilized by the enemy. With a curb weight of only 14,000 pounds, The Protector offers improved safety from ballistics, IEDs and EFPs in a lighter package than the HMMWV. In addition to standard armor, The Protector is designed to accept the up-armor ShieldAll™, available exclusively from Protected Vehicles, Inc. This revolutionary next-generation composite armor material is not only a lighter, more capable and cost-effective armor solution to steel, but has also been repeatedly tested at U.S. Government facilities as a proven defense against deadly EFPs. As the threats on a new asymmetric battlefield continue to evolve, The Protector has arrived to mitigate risks, protect the war-fighters and accomplish the

mission.

#### **Standard Specifications:**

- 7.62x54 AP Protection
- Seating for 2+4
- 2 Side Doors+1 Rear Door
- Cruise Speed of 70 mph
- Excess Payload of 7,500 lbs
- C-130 Transportable

#### **Optional Specifications:**

- IED and EFP Protection with ShieldAll™
- Nuclear, Biological and Chemical (NBC) Protection

The Protector is PVI's third vehicle, preceded by the GOLAN and the ALPHA. The company is currently providing both GOLANs and ALPHAs for the military.

#### **About Protected Vehicles, Inc.**

Protected Vehicles, Inc. designs and manufactures mine and ballistic protected vehicles using advanced U.S. technology; technology derived from Rhodesian and South African vehicle development programs carried out from 1970 through 1994; and U.S. DoD technology developments. Founded in 2005 by Garth Barrett, a pioneer in blast and ballistic protection since the early 1970's, PVI is headquartered in North Charleston, South Carolina. The Company has approximately 600,000 square feet of R&D and heavy metal fabrication space capable of cutting, bending, and manufacturing; thus enabling complete onsite fabrication of capsules and vehicle assemblies. PVI and Battelle announced ShieldAll™ in 2006, a breakthrough in multi-hit capable armor protection approximately 1/3 the weight of armored steel.



### **Defence Industry**

#### **PVI EFP SOLUTION PASSES TESTING**

North Charleston, SC- Protected Vehicles, Inc. is pleased to announce that ShieldAll™, the company's solution to combating deadly explosively formed penetrators (EFPs), has completed several rounds of intensive testing on the proving grounds of a U.S. Government testing facility.

The results exceeded expectations of the product's resilience to the devastating effects of an improvised explosive device (IED). EFPs are among the most destructive IEDs used by the enemy in Iraq and Afghanistan. IEDs account for approximately 70 percent of casualties in the field.

ShieldAll™, available exclusively from PVI, was created from an advanced materials development program at Battelle. With this revolutionary material in hand, PVI and Battelle joined forces to create a composite armor encompassing ceramics, metals, reinforcing and patented binders that provide exceptional protection against threats from powerful EFP explosions

This armor solution is 1/3 lighter than steel armor, yet provides EFP protection which standard steel armor does not. This makes PVI's EFP solution lighter than all known solutions to date. Although originally developed for use on PVI's GOLAN, ALPHA and PROTECTOR



line of vehicles, ShieldAll™ utilizes a versatile design which allows it to be used as an up-armor kit on an assortment of other combat vehicles currently being developed and already in the operating theater.

This revolutionary armor solution is based on readily available components and ongoing involvement from a tier one polymer manufacturer. ShieldAll™ is available immediately for large-scale production ramp up.

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### Defence Industry

#### **Patria To Modernise Radar Platforms For The Finnish Defence Forces**

Patria has today received an order from the Finnish Defence Forces Materiel Command (DFMC) for modernising a serie of target acquisition radar platforms.

The value of the purchase order is approximately EUR 10 million. Deliveries are scheduled for 2008-2010. The work is performed by Patria Vehicles.

Target Acquisition Radar 87 is an independent mobile radar station mounted on a Patria XA-180 armoured transport vehicle.

The maximum height of the target acquisition radar's is 15 m. Its surveillance height is 4-5 km and the range depending on the size of the target is 75 km. The radar is capable of simultaneous automatic monitoring of 20 targets as well as 10 countermeasure actions.

Patria is an internationally operating Aerospace and Defence Group actively participating in the development of new technologies. Patria's core business areas are armoured wheeled vehicles and heavy weapon systems including their life cycle service, defence electronics, helicopter and military aircraft life cycle support as well as demanding composite structures. Patria is the leading supplier of armoured wheeled vehicles in Europe. The Finnish State and EADS are Patria's shareholders. The Group had net sales of EUR 232.5 million in 2002 and the number of employees was 2 004.

The Finnish Defence Forces Materiel Command is responsible for the purchases of the joint materiel for the Finnish Defence Forces as well as materiel for the Army. The DFMC is also responsible for the whole technical life cycle of the materiel.

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