

Army Guide monthly



6 (105) June 2013

- **Verify Brand Platform Provides Security to DoD Supply Chains**
- **Israel`s unmanned defenders**
- **AM General`s BRV-O(TM) JLTV Rolls Down Production Line and into Key Government Testing**
- **Bushmaster - 1000 strong and still going**
- **Armour Plate Experts Unveil SMARTbend at DVD 2013**
- **Oshkosh Defense Receives EMD Contract to Develop JLTV - the Future of Light Tactical Vehicles**
- **Rheinmetall to supply the Bundeswehr with ROSY smoke protection system**
- **Rheinmetall receives major order worth €475 million for new Leopard 2 and self-propelled howitzer project**
- **Cubic Wins U.S. Marine Corps Laser Engagement Training Systems Contract**
- **GDELS Awarded New Contract for 100 EAGLE V 4x4 Vehicles for Germany**
- **Raytheon delivers 1st NASAMS High Mobility Launcher to Norway**
- **LM's Final JLTV Development Vehicle Rolls off Assembly Line**

Defence Industry

Verify Brand Platform Provides Security to DoD Supply Chains

Minneapolis -- In the age of government-targeted cyber attacks and widespread counterfeit electronics, the ability to trace a supplier and verify the authenticity of critical military products is more important than ever.

Verify Brand recently enhanced its advanced serialization, traceability and authentication platform, VB Enterprise, to support asset visibility and supply-chain security for OEMs and government contractors.

The VB Enterprise platform uses unique, unpredictable codes or serial numbers, as well as product traceability, to help combat potentially dangerous counterfeits and secure the supply chain for mission-critical parts, including command, control, communications and computer (C4) equipment. Testing and validating all hardware and software components used in this equipment can be extremely difficult and time consuming because the products come from a range of vendors that support both commercial and defense customers.

The Verify Brand platform allows users to quickly and easily confirm the authenticity of products, so suspicious components can be targeted for thorough testing and validation, while verified products continue through the supply chain. Suspicious parts can be identified, quarantined and electronically reported to trading partners.

“The VB Enterprise supports secure serialization, product tracking and product authentication across the supply chain of brand owners, distributors, logistics partners and defense contractors,” said Mark Prokosch, Vice President of Verify Brand. “Combining secure, unpredictable unique identifiers with traceability software drastically reduces the proliferation of counterfeit parts within the defense supply chain.”

The VB Enterprise platform offers complete chain-of-custody proof – from manufacturing centers to customer receipt – to verify the authenticity of C4 equipment or other high-value goods, and to track suspicious products back to their suppliers. This is especially crucial to helping prevent the spread of malicious software, or malware, which can infect a military network, damage vital equipment or expose critical military information to outside parties.

In addition to supporting counterfeit protection and avoidance programs, the VB Enterprise platform provides compliance with the U.S. Department of Defense’s (DoD) MIL-STD-130 standard, which requires that assets valued at \$5,000 or more be “marked” with Item Unique Identification (IUID) codes. The DoD uses these codes to track and account for assets.

Defense contractors, OEMs and subcontractors can use the VB Enterprise platform to support the entire process of creating and registering standard-compliant IUID codes. The platform also can communicate with the

DoD’s IUID registry to automate DoD registration, saving hours of time when registering large deliveries of products. All events and alerts – from IUID creation to product acceptance – are cataloged in reports, which can be monitored via the Web, on any mobile device or via scheduled emails.

About Verify Brand, LLC

Verify Brand is exclusively focused on enabling serialization and traceability systems for unique identification life-cycle management. The company’s first customer was a medical device division of a Fortune 50 life sciences company. Verify Brand’s Software as a Service, cloud-based solutions enable brand owners to address numerous supply chain security and management challenges as well as rapidly emerging regulatory or commercial or government procurement requirements for serialization and traceability around the world. Verify Brand services are helping to secure hundreds of millions of products with customers across industries and languages in more than 80 countries around the world.



Army

Israel’s unmanned defenders



Head of robotics development: IDF uses robotic technology “to strengthen our forces’ operational capability and to facilitate the IDF’s ground superiority”.

Senior officers of the Defense Ministry’s Administration for the Development of Weapons and Technological Infrastructure (MAFAT) were among the participants and speakers in a conference on robotics and its potential for military use held at Tel Aviv University this week.

In a session dealing with the use of robotics for security and military purposes, Lt. Col. Gabi, head of MAFAT’s Robotics Division, delivered a general survey of ground robotics in the IDF.

“Our systems operate in coordination with existing weapons systems, so as to strengthen our forces’ operational capability and to facilitate the IDF’s ground superiority,” he stated.

Lt. Col. Gabi’s lecture focused largely on the IDF’s use of unmanned ground vehicles (UGVs). “These tools travel on a complex network of predetermined roads, and 90 percent of the time, that happens without the intervention of their operators,” he said.

Currently, the IDF uses UGVs – including the Israeli-developed Guardium – primarily within the Southern Command. UGVs are also used as observation tools along the Judea and Samaria security fence.

Reducing danger for soldiers

In addition to its UGVs, the IDF uses robots to identify and neutralize explosives. These robots utilize advanced capabilities – such as three-dimensional mapping in real time, identifying barriers and planning routes – so as to minimize the involvement of the operators and allow them to focus on other tasks.

“These actions are performed to allow for the opening of roads for the free and safe movement of military forces,” Lt. Col. Gabi explained.

Lt. Col. Gabi discussed various combat scenarios in which robots and UGVs can assist ground forces. “One of the [necessary tasks], for instance, is the clearing of roads from threats or explosives, and it makes perfect sense for this to be done as much as possible by unmanned systems,” he explained. “The UGVs can observe from closer and more dangerous points and draw fire toward themselves tactically.”

In urban combat scenarios, he noted, robotic technology can play a particularly important role in keeping soldiers safe. “The robots sometimes go in front of the forces, open challenging roads such as narrow alleys and assist logistically. A robot can help lighten a soldier’s burden, so that if the soldier is confronted with a battle, he or she can respond appropriately,” Lt. Col. Gabi stated.

He added that he IDF hopes to further upgrade such technology, with plans to begin using a new computerized system that will generate an approximate route for a UGV. The precise route, however, will be determined by the UGV itself.

“The [UGV] will be equipped with obstacle detection sensors, cameras and other tools, and it will be able to identify the barriers by itself and circumvent them,” he explained.



Defence Industry

AM General’s BRV-O(TM) JLTV Rolls Down Production Line and into Key Government Testing



SOUTH BEND, Ind. -- AM General’s Light Tactical Vehicle Assembly Line (LTVAL) is full of activity as the company’s Blast Resistant Vehicle(TM) - Off road (BRV-O(TM)) steadily moves through the production line and on to Joint Light Tactical Vehicle (JLTV) government testing (see photo link below). The company’s experienced workforce, many of whom work on this active line, has produced approximately 300,000 of the company’s iconic High Mobility Multi-purpose Wheeled Vehicle (HMMWV) for all branches of the U.S. military, as well as the armed services of more than 50 other

countries.

The new BRV-O(TM) represents more than a decade of AM General investment in research, development and testing for this next-generation vehicle for the U.S. Army and Marine Corps. In August 2012, the company’s independent proposal for JLTV was selected for a \$64.5 million Engineering, Manufacturing and Development (EMD) phase contract. As one of three competitors, AM General is building 22 BRV-O(TM)s for delivery in August and subsequent government testing in the EMD phase. These will include a 4-seat variant Combat Tactical Vehicle that supports three different mission package configurations and a 2-seat variant Combat Support Vehicle that supports a utility mission package configuration for different mission roles across the full spectrum of military operations.

“We are setting the pace on integrating components, meeting timelines and other requirements and working closely with our military customer representatives daily,” said AM General Vice President of Business Development and Program Management Chris Vanslager. “Light tactical vehicles are in our DNA, and it shows in the focus, excitement and pride all along the assembly line. Low risk, high quality and affordability is what our customer demands and we at AM General have more than five decades of experience and a more than 1.5 million light tactical vehicle heritage to back it up.”

He noted that AM General’s highly skilled workers know light military trucks from decades of experience. They actively contribute to production engineering, continuous product improvements, and what is among the highest build-quality indices in the industry. A measure of the high quality level of the product engineering and manufacturing was recently displayed when the weight of the first eight BRV-O vehicles validated the design weight.

AM General’s Military Assembly Plant is dedicated to light tactical vehicles and is capable of producing different vehicles, models, configurations and paint schemes at the same time. It often has done so in manufacturing HMMWVs for U.S. and foreign military customers while earning a record of delivering reliable and versatile vehicles on time and on budget.

As the BRV-O(TM) JLTVs leave the LTVAL at the Military Assembly Plant, they will receive additional “mission packages” some provided by AM General and others as Government Furnished Equipment (GFE), to convert each base vehicle into a specific mission package configuration such as the Heavy Guns Carrier. Then each vehicle undergoes AM General break-in and shake-down testing before delivery to the military.

Over its long history, AM General has produced more than 1.5 million light tactical vehicles in defense of this country’s freedom — far more than any other American company. BRV-O(TM) features a crew capsule of modular armor design currently undergoing government blast testing. The BRV-O(TM) design can be readily adapted to future changes in U.S. military missions, enemy threats and new protection technologies as they emerge. BRV-O(TM) also features AM General’s

lightweight, fuel efficient and high performance engine and transmission powertrain; a self-leveling suspension system; a C4ISR backbone with open-standard networked architecture and clustered super-computing power; and other advanced components.

AM General designs, engineers, manufactures, supplies and supports specialized vehicles for military and commercial customers worldwide. AM General has more than five decades of experience meeting the changing needs of the defense and automotive industries, supported by its employees at major facilities in Indiana, Michigan, and Ohio, and a strong supplier base that stretches across 43 states.

light protected vehicle, Hawkei, for the ADF and export markets."

Future Technologies

Armour Plate Experts Unveil SMARTbend at DVD 2013



MTL Group today announced the launch of a new technology called SMARTbend. This technology developed by Europe's leading specialist in cold forming ultra-high-hard armoured materials allows intricate shapes to be formed without the need for expensive tooling.

Following on from the success of its IMPAS Armour solution for add-on protection up to STANAG 4569 Level IV, MTL Group has invested significantly in SMARTbend giving armoured vehicle manufacturers a lower cost cold formed solution as an alternative to hot formed armour.

Due to the nature of SMARTbend, no heat is introduced into the material so the original mechanical properties of the steel are maintained unlike other processes that rely on heat and expensive, bespoke tooling to bend this type of material.

Simon Hurst, Sales Manager for Defence at MTL Group said

"Our customers are always challenging us to offer new options for their current vehicle protection systems. We work with them to manufacture an armoured structure in fewer pieces giving a stronger, lighter and more cost effective product together with increased protection levels to the end user"

With all processing under one roof at its 30,000 sq. m. facility in Rotherham, UK, MTL Group has already demonstrated its capability in the design, development and manufacture of fully fabricated armoured structures to its global customer based. MTL Group is recognised as one of the leading manufacturers in the world to offer this complete service.

This SMARTbend technology, together with MTL Group's already successful DFM (Design for Manufacture) service is giving global vehicle manufacturers new opportunities and they are already seeing the benefits of SMARTbend to reduce cost and weight and to seriously think "outside the box" at the design stage.

Simon Hurst said "It is an exciting and busy time for MTL Group at the moment with more customers

Defence Industry

Bushmaster - 1000 strong and still going



The 1,000th Bushmaster vehicle to be produced at Thales Australia's Bendigo facility will be delivered to the Australian Defence Force this Friday.

The Bushmaster is an Australian success story, delivering for the ADF, the local defence industry and Australia's domestic manufacturing capability.

Most importantly, the Bushmaster has saved hundreds of Australian lives.

The milestone will be marked at an event at Thales's Bendigo facility in Victoria, where the 1,000th Bushmaster will be officially handed over to the Department of Defence.

Chris Jenkins, Thales Australia's CEO, said: "This is a very important day because the Bushmaster has become such a recognised life-saving vehicle thanks to its performance on overseas operations with the ADF and other customers.

To have produced 1,000 vehicles is a testament not only to the Bushmaster's innovative design and technology, but also to the high quality of its manufacturing. This is due to the skills and expertise of the workforce we have in Bendigo, where 200 people are dedicated to ensuring the continued success and evolution of the Bushmaster platform.

"Australian industry has played a vital role in this achievement. There are around 120 companies in the Bushmaster supply chain, many of them local SMEs whose hard work, innovation and commitment to delivery have helped make the Bushmaster what it is today."

"Working together, Defence, Thales Australia and our industry partners have created a vital strategic capability, fully proven and ready to produce the next generation

bringing their challenges to the table ranging from hull optimisation projects to weight and cost reduction programmes and they are seeing excellent results.”

MTL Group will exhibit its SMARTbend and DFM in Concept 3 at DVD 2013, Millbrook Proving Ground in June.



Future Technologies

Oshkosh Defense Receives EMD Contract to Develop JLTV - the Future of Light Tactical Vehicles



OSHKOSH, Wis. -- The U.S. Department of Defense has awarded Oshkosh Defense, a division of Oshkosh Corporation, a contract for the Joint Light Tactical Vehicle (JLTV) program's Engineering, Manufacturing and Development (EMD) phase. The JLTV program aims to replace many of the U.S. military's aged HMMWVs with a lightweight vehicle that offers greater protection, mobility and transportability.

“The JLTV program is critical to supporting our troops who stand in harm's way and deserve the best equipment that industry can provide,” said John Urias, Oshkosh Corporation executive vice president and president, Oshkosh Defense. “The Oshkosh JLTV solution will allow the Army and Marine Corps to provide unprecedented levels of protection and off-road mobility in a light vehicle – so that their troops can accomplish their missions and return home safely.”

JLTV is managed by the Joint U.S. Army and U.S. Marine Corps program, under the leadership of the U.S. Army's Program Executive Office for Combat Support and Combat Service Support (PEO CS&CSS). Under the contract, Oshkosh will deliver 22 Oshkosh-designed and manufactured JLTV prototypes within 365 days of contract award, and support government testing and evaluation of the prototypes.

Since 2006, Oshkosh has invested significantly in independent R&D to develop its JLTV solution. Oshkosh employed a generational product development approach that aligned to rapidly evolving technical requirements. As a result, the Oshkosh JLTV delivers the latest automotive technologies, an advanced crew protection system, and a next generation TAK-4i™ independent suspension system to achieve JLTV performance at an affordable price. The Oshkosh JLTV is fully tested, ready for initial production, and meets or exceeds the requirements of the JLTV program.

“The Oshkosh JLTV solution was designed with a purpose – to keep Warfighters safe on future battlefields

with unpredictable terrain, tactics, and threats,” said John Bryant, vice president and general manager of Joint and Marine Corps Programs for Oshkosh Defense. “Oshkosh has a 90-year history of delivering high quality military vehicle programs on-time and on-budget, and our JLTV program is no exception. We understand how critical this light, protected, off-road vehicle will be to Warfighters.”

The Oshkosh JLTV solution, called the Light Combat Tactical All-Terrain Vehicle, or L-ATV, offers an advanced crew protection system that has been extensively tested and is proven to optimize crew survivability. The L-ATV can accept multiple armor configurations, which allows the vehicle to adapt easily to changing operational requirements. The L-ATV also applies the Oshkosh TAK-4i™ intelligent independent-suspension system to provide significantly faster speeds when operating off-road, which can be critical to troops' safety.

Oshkosh Defense has an unwavering commitment to the men and women who serve our nation. Notably, Oshkosh was awarded the M-ATV contract in June 2009 on an urgent needs basis. Oshkosh ramped up production at a historical pace – delivering 1,000 vehicles per month within six months. Oshkosh delivered more than 8,700 M-ATVs, most of which were deployed in Afghanistan and are credited for saving thousands of troops' lives.

“Oshkosh's M-ATV is the only vehicle in the combat theater in Afghanistan performing the JLTV's mission profile,” said Bryant. “We delivered more than 8,700 M-ATV's on-time and on-budget, and Oshkosh will bring the same level of commitment to the JLTV program.”



Defence Industry

Rheinmetall to supply the Bundeswehr with ROSY smoke protection system



The Bundeswehr is procuring Rheinmetall's Rapid Obscurant System Land (ROSY_L) for protecting ground vehicles, the first customer to do so. Germany's Federal Agency for Bundeswehr Equipment, Information Technology and In-Service Support (BAAINBw) has contracted with the Dfjsseldorf-based Group to supply the German military with smoke launchers and installation kits for 500 vehicles and weapon stations. Worth around €8.5 million, the initial order also encompasses 50,000 rounds of associated 40mm multispectral smoke ammunition.

ROSY_L can make a significant contribution to

improving force protection in high-risk areas of operation such as Afghanistan. The Bundeswehr plans to use the system primarily for equipping lightweight wheeled and logistical vehicles, thus bridging a special capabilities gap in deployed operations. ROSY_L has been fully qualified by the BAANBw.

The ROSY_L smoke protection system helps to protect the crew and passengers of military and civilian vehicles from surprise attacks and ambushes e.g. during reconnaissance patrols or while travelling in convoy. Unlike conventional smoke and obscurant systems, ROSY_L produces within one second an instantaneous, large-area, multispectral interruption of the line of sight that shields even moving vehicles with a dynamic, long-lasting smoke screen.

Its multi-mission capability assures 360° protection from multiple attackers (stream and wave attacks). Moreover, thanks to effective screening in the visual and infrared spectrums, including integrated IR jamming and decoying effects, ROSY_L effectively thwarts attacks with all types of TV-, EO-, IR-, IIR-, laser- und SACLOS-guided weapons.

ROSY_L encompasses a basic system with a manual control unit and from one to four ROSY launchers per vehicle. A “one-click” adapter makes mounting the system on vehicles quick and easy, with no need for tools, particularly suitable for “fitted-for” installations.

Furthermore, the system features extreme modularity and can be directly linked to the sensor suite of the carrier vehicle’s computer systems. The ammunition variants can be individually selected and triggered, enabling optimum positioning of smoke screens.

Along with the Bundeswehr, customers from Scandinavia, the Benelux states, Russia and Eastern Europe as well as North Africa and the Middle East have all expressed a strong interest in ROSY_L.

Diverse applications

Besides ROSY_L, Rheinmetall supplies a number of other variants of its basic smoke/obscurant system.

The 40mm ROSY_N decoy system, for example, was specially developed to provide effective protection for small naval and coast guard units. ROSY_N lends itself in particular to fast attack craft, patrol vessels and rigid hull inflatable boats (RHIBs) as well as landing craft, providing excellent protection from missiles and asymmetric attacks in littoral zones or inland waters. The system couples instantaneous protection with a dynamic operational capability.

In addition, the modular ROSY_Mod for small weapon stations and light vehicles of the kind used by special operations forces, for example, is available. ROSY_Mod can be integrated directly into the vehicle without a launcher, making it undetectable.



An important new order from an Arab customer underscores Rheinmetall’s role as a leading international supplier of army technology products.



Specifically, Rheinmetall will be supplying complete L55-type tank guns for over sixty Leopard 2A7 main battle tanks, together with fire control electronics and electro-optical sensors for the medium-calibre weapon station.

In addition, Rheinmetall will manufacture the chassis and L52 main armament for over twenty PzH 2000 self-propelled howitzers, as well as supplying a complete driver training vehicle.

The DΓjsseldorf-based Rheinmetall Group will also be responsible for a spare parts package and special tools as well as training and documentation services.

The order also encompasses 120mm ammunition for the Leopard and 155mm ammunition for the PzH 2000 in multiple variants, together with MTLs modular propelling charges for the artillery system.

Rheinmetall has over forty years’ experience in developing and manufacturing armoured fighting vehicles. The Leopard 2 continues to set the global standard for modern main battle tanks. In service with the armies of 18 nations, over 3,600 now exist. Rheinmetall played a decisive part in developing and producing the Leopard 2. Of the 2,125 A4 versions of the Leopard 2 built, Rheinmetall completely manufactured 977 of these systems in Kiel on behalf of the armed forces of Germany and the Netherlands.

By contributing a number of crucial components, Rheinmetall has a major technological stake in the overall Leopard system. For example, Rheinmetall is responsible for the 120mm smoothbore gun, still considered to be most effective tank main armament anywhere. Produced under licence, this cutting edge weapon is also integrated into America’s M1 Abrams as well as a number of other main battle tanks.

Moreover, both the Leopard and PzH 2000 benefit tremendously from Rheinmetall’s unsurpassed expertise in the field of large-calibre ammunition. In both of these fighting vehicles, the perfectly harmonized combination of main armament and ammunition attests to the company’s unique competence in weapons and munitions as well as systems engineering.

Rheinmetall’s technological dominance also extends to the world of combat support vehicles: closely based on the Leopard and developed by Rheinmetall, the BΓjffel/Bufalo 3 armoured recovery vehicle forms a veritable “Main Battle Tank System” when teamed with the Leopard 2. Likewise based on the Leopard 2 chassis,

Contracts

Rheinmetall receives major order worth €475 million for new Leopard 2 and self-propelled howitzer project

Rheinmetall's highly specialized Kodiak armoured engineering vehicle impressively underscores the company's system capabilities and competence, which extend far beyond the classic main battle tank.

Furthermore, in the field of C4I and fire control technology, Rheinmetall occupies a unique position in the global marketplace. Adapted to meet individual customer requirements, the company supplies individual solutions that can be integrated into higher-echelon command and control systems.

Training And Simulators

Cubic Wins U.S. Marine Corps Laser Engagement Training Systems Contract



SAN DIEGO -- Cubic Defense Applications, the defense systems business unit of Cubic Corporation, has been awarded a \$49 million indefinite delivery type contract from the U.S. Marine Corps Systems Command to supply an advanced Instrumented-Tactical Engagement Simulation System (I-TESS II).

Cubic will provide a turn-key deployable training capability that includes an immersive training environment that replicates the stresses and threats of actual combat. This system will be used in Marine force-on-force and force-on-target training exercises, including indoor and outdoor military operations in urban terrain (MOUT) training, at multiple locations in the U.S. and abroad.

ITESS II is a fully integrated ground combat training system based on the company's latest laser-based wireless instrumentation products. This system includes: small arms laser transmitters, rocket-propelled grenade and AT-4 anti-armor simulators, man-worn and wireless vehicle laser detection, and mobile and portable command and control systems that capture and display real-time participant position/status and creates objective data based after-action reviews.

"This system will provide the U.S. Marine Corps an exceptional training environment using proven components," said Ray Barker, Executive Vice President of Cubic Defense Applications. "Our system will support small unit training, and is capable of integrating multiple units for combined arms training at higher echelons. It also allows Marines to fully integrate live, virtual and computer-based constructive elements into their training mix for a more complex and realistic training experience."

Cubic Corporation is the parent company of three major business segments: Defense Systems, Mission Support Services and Transportation Systems. Cubic

Defense Systems is a leading provider of realistic combat training systems, cyber technologies, asset tracking solutions, and defense electronics. Mission Support Services is a leading provider of training, operations, maintenance, technical and other support services. Cubic Transportation Systems is the world's leading provider of automated fare collection systems and services for public transit authorities.

Contracts

GDELS Awarded New Contract for 100 EAGLE V 4x4 Vehicles for Germany



General Dynamics European Land Systems was awarded a contract by the German Procurement Agency, Bundesamt für Ausrüstung, Informationstechnik und Nutzung der Bundeswehr (BAAINBw), for the delivery of 100 EAGLE V Protected Command Vehicles for the "GFF Klasse 2" Program. This contract includes an option for the purchase of 76 additional vehicles.

The EAGLE V is a further development of the EAGLE IV fleet, already in service. The EAGLE V features a larger payload capacity and increased crew protection at the same level of mobility. The total cost of ownership of these vehicles will be reduced through the EAGLE Family of Vehicles concept, with its high degree of commonality, maintenance-friendly design and proven support solutions.

The vehicles will be jointly manufactured in Kreuzlingen (Switzerland) and Kaiserslautern (Germany). Deliveries will start in 2013 and continue throughout 2015, if the option is exercised.

After thorough testing by the Bundeswehr at their proving grounds, the EAGLE V fulfilled all requirements, demonstrating its high agility, tactical mobility, survivability and its suitability for the entire mission spectrum for this class of vehicles.

The Protected Command Vehicles can be used for various missions by applying modular add-on kits. In addition to the high level of crew protection, the substantial payload capability is designed to fulfil future requirements.

Due to its ergonomic design and usability the EAGLE V is easy to handle and has low training costs.

Lifecycle costs of the vehicle fleet are further minimized by a high degree of logistic commonality of approximately 80% among the EAGLE V (4x4 and 6x6), the EAGLE IV and the DURO IIP tactical truck.

Defence Industry

Raytheon delivers 1st NASAMS High Mobility Launcher to Norway



Raytheon Company has delivered the first High Mobility Launcher (HML) for Norway's National Advanced Surface-to-Air Missile System (NASAMS) to provide Norway with advanced air defense capability. When time is of the essence to protect high-value assets and populations, the HML significantly reduces the time required to transport and ready the system.

"The Royal Norwegian Air Force is the first international NASAMS customer to receive this highly mobile solution that can be easily rolled on and off a C-130," said Sanjay Kapoor, vice president of Integrated Air and Missile Defense for Raytheon's Integrated Defense Systems (IDS) business. "This is an important milestone for Raytheon and our partner KONGSBERG because of the transportability, safety and security it brings to the maneuvering forces when countering evolving threats."

The new HML has the modern NASAMS electronics that the Norwegian Air Force will soon be installing and upgrading in its existing fleet of canister launchers. The resulting commonality will help reduce maintenance and lifecycle costs. The modern package includes GPS and north-finding instrumentation for quicker system placement and positioning in the battlefield and increased target engagement accuracy. In addition to Norway and an undisclosed customer, the Raytheon-KONGSBERG NASAMS is currently deployed in Finland, the Netherlands, Spain and the U.S. National Capital Region.



Future Technologies

LM's Final JLTV Development Vehicle Rolls off Assembly Line

The final Lockheed Martin Joint Light Tactical Vehicle (JLTV) produced for the program's Engineering, Manufacturing and Development (EMD) phase has rolled off the assembly line, joining a fleet of previously completed vehicles that will be delivered for government testing and evaluation this summer.

The Lockheed Martin team produced a total of 22 JLTV test vehicles, which were manufactured at BAE Systems' Sealy, Texas, manufacturing facility, a world leader in the production of military and severe-duty wheeled vehicles. Delivery to the U.S. Army and Marine

Corps for long-term testing and evaluation is scheduled for August 22.



"Lockheed Martin is committed to providing our soldiers and Marines with a vehicle of unequalled capability and dependability, and one that is affordable both to buy and to operate," said Scott Greene, vice president of ground vehicles for Lockheed Martin Missiles and Fire Control. "We are excited to get these vehicles into the hands of the customer. Early break-in testing is under way, and we are confident that our JLTV design will serve our servicemen and women well."

Following successes in the program's Technology Development phase, the U.S. Army and Marine Corps awarded Lockheed Martin a \$65 million contract in August 2012 to continue developing JLTV through the EMD phase. Initial tests demonstrated that the Lockheed Martin design provided blast protection equivalent to much larger mine-resistant vehicles in service today.

The Lockheed Martin Joint Light Tactical Vehicle balances the "iron triangle" of protection, performance and payload while maintaining affordability. Compared to general-purpose vehicles currently in service, the Lockheed Martin JLTV will provide greatly improved crew protection and mobility, lower logistical support costs, superior fuel efficiency and state-of-the-art connectivity with other platforms and systems. The team's current JLTV design maintains the proven force protection, transportability and reliability of the earlier Technology Development model, while significantly reducing weight and cost.

For more than three decades, Lockheed Martin has applied its systems-integration expertise to a wide range of successful ground vehicles for U.S. and allied forces worldwide. The company's products include the combat-proven Multiple Launch Rocket System M270-series and HIMARS mobile launchers, Havoc 8x8, Common Vehicle, Light Armored Vehicle-Command and Control, Warrior Capability Sustainment Programme, Joint Light Tactical Vehicle and pioneering unmanned platforms such as the Squad Mission Support System.

Lockheed Martin Missiles and Fire Control is a 2012 recipient of the U.S. Department of Commerce's Malcolm Baldrige National Quality Award for performance excellence. The Malcolm Baldrige Award represents the highest honor that can be awarded to American companies for their achievements in leadership, strategic planning, customer relations, measurement, analysis, workforce excellence, operations

and results.

