

# Army Guide monthly



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**Defence Industry**

**BAE Teams With Ray Service to Support Swedish Mjölner Mortar Program**



BAE Systems has contracted Czech manufacturer Ray Service to deliver key components for the Swedish vehicle-mounted mortar system known as Mjölner.

BAE Systems was awarded a contract by the Swedish Defence Material Administration in December 2016 for the delivery of 40 of the mortar systems and has now enlisted Ray Service to develop and produce cabling assemblies.

The arrangement further solidifies BAE Systems’ commitment to work with Czech companies as it supports the government’s effort to replace the legacy fleet of BMP-2 Infantry Fighting Vehicles (IFVs). In 2016 BAE Systems teamed up with VOP CZ, a leading Czech defense company, to offer the CV90 IFV as the replacement vehicle, and subsequently contracted with that company to produce components for the BvS10 all-terrain vehicle, also produced by BAE Systems.

“The agreement with Ray Service demonstrates our commitment to deliver a world-class CV90 offering through close cooperation with Czech industry in order to meet the Czech Army’s IFV requirement,” said Peter Nygren, director of business development at BAE Systems Högglunds. “The design and production of the cable harnesses for the 40 mortar systems is a strong foundation for working together in the future. This collaborative effort ensures a role for local industry to produce one of the critical subsystems in the vehicle.”

The CV90 IFV is a modern, adaptable, combat proven vehicle with more than 1,200 operating with seven nations, including several NATO allies. If the Czech government selects the CV90, BAE Systems will continue to cooperate with Czech companies to deliver the vehicles and meet current and future security needs of the country.

“We are thrilled with the opportunity to work alongside BAE Systems on this contract and look forward to further developing our relationship with the company,” said Jakub Gabriel, managing director at Ray Service. “Our strong history in engineering and production means we will deliver a quality service on time and on budget, and to defense sector requirements.”

**Defence Industry**

**NIOA joins Rheinmetall Defence Land 400 Team**

Rheinmetall Defence Australia today announced Brisbane-based NIOA as the company’s key supplier of ammunition and armament services for its Land 400 Phase 2 offer to the Commonwealth of Australia.



The partnership between the two companies is underpinned by a commercial relationship spanning 20 years and a shared commitment towards placing Australian Industry Capability at the centre of Rheinmetall’s offer to deliver the BOXER CRV to the Australian Defence Force.

Rheinmetall has a longstanding supplier relationship with NIOA through its weapon and munitions arm, Rheinmetall Weapons and Munitions (RWM), built on the delivery of world class ammunition and pyrotechnics to the Australian Defence Force and state and federal police forces.

“Working side by side on our Land 400 Phase 2 offer represents a natural next step in the relationship between Rheinmetall and NIOA,” said Rheinmetall Defence Australia Managing Director Andrew Fletcher.

NIOA’s indigenous capabilities will also augment the establishment of national infrastructure asset for military vehicles in Australia to underpin a 50-year strategic relationship between the Commonwealth of Australia, the Australian Army and defence industry.

As the largest supplier of military vehicles to the Australian Defence Force, Rheinmetall will establish a military vehicle centre of excellence (MILVEHCOE) which creates a program of continuous design, build and support for military vehicles in Australia and the Asia-Pacific region. This world class facility will draw in a network of suppliers across Australia to deliver products and services to Australia’s growing fleet of military vehicles and open the way for these companies to supply Rheinmetall military vehicle programs around the world through the company’s Global Supply Chain.

**Defence Industry**

**General Dynamics European Land Systems demonstrates the PIRANHA 8X8 Wheeled Armoured Vehicle to the Bulgarian Army**



KAZANLAK (BULGARIA) -- The PIRANHA INFANTRY Fighting Vehicle (IFV), a member of the PIRANHA

family of vehicles, was officially presented on April 27th at the Military polygon Tylbeto near the city of Kazanlak in Bulgaria. The Military Unit Tylbeto in Kazanlak hosted the vehicle demonstration event, with a broad military audience, state officials and authorities and local industry in attendance.

Together with its partners, General Dynamics Mission Systems and Rafael Advanced Defense Systems, General Dynamics European Land Systems successfully conducted the three-day vehicle demonstration and live firing event with a PIRANHA IFV equipped with a 30mm NATO-compliant remote controlled weapon station, an anti-tank guided missile system and a fully integrated communication information system. The vehicle is a candidate for the Bulgarian Army's Battalion Battle Group acquisition project.

"General Dynamics European Land Systems is honoured to have the opportunity to present the full range of the PIRANHA system capabilities to the Bulgarian Army. With our proven technology and advanced system capabilities, we are confident in our ability to provide the Bulgarian Army with a compliant solution," said Dr. Thomas Kauffmann, Vice President of International Business & Services of General Dynamics European Land Systems.



### Exhibitions

#### Otokar showcases 15 vehicles at IDEF 2017



Land defence systems house of Turkey, Otokar, a Koğuş Group company, is showcasing its own designed and manufactured, world renowned military vehicles and turret systems on 9-12 May 2017 at the 13th IDEF International Defence Industry Exhibition. At the 4-day exhibition, organized under the aegis of the Turkish Presidency and hosted by the Turkish Ministry of Defence, Otokar is exhibiting 15 armoured vehicles and its own designed turret systems.

In addition to the wide product range, visitors of the Otokar booth at the TIjyap Exhibition and Congress Center in Istanbul get the opportunity to see the ALTAY-AHT Urban Operations Tank, developed by Otokar on the ALTAY Main Battle Tank (ALTAY MBT) Hull and Turret platform, for the first time. At the largest exhibition of the region, URAL Armoured Single Cabin Pickup is also exhibited for the first time. The National Main Battle Tank ALTAY, counting days to serial production, is also exhibited at the Otokar booth in

the exhibition where Defence Ministers of friendly and allied countries, Chiefs of Staff, senior civilian and military authorities, and decision makers for the procurement of defence equipment are hosted.

Otokar General Manager Serdar Gİrgİn said, "As Turkey's most experienced land systems company, we are striving to provide the best products and services to more than 50 clients in the world, including Turkish army and security forces. The experience we gain in Turkey and the world on diverse terrains and under different climate conditions is reflected on our research and development activities. Thus, we act according to present and future threats and needs, and predict our clients' expectations. ALTAY-AHT Urban Operations Tank, which we are exhibiting for the first time at the exhibition today, is a great example of these activities. In response to hybrid and asymmetrical threats and conditions where unconventional forces and methods are employed spreading more widely, we designed ALTAY-AHT Urban Operations Tank using our own resources that will meet future needs of Turkish Armed Forces and will have high export potential. This urban operations tank, which Otokar designed with its own insights and capabilities, is also a solid indicator of our claim in the serial production of ALTAY, and proof that we have the capabilities and human resource for serial production. If tasked with serial production, we are ready to deliver the best for our country and armed forces."

Stating that Otokar boasts the widest land defence systems product range from 4x4 to 8x8, from tracked armoured vehicles to turret systems, and is Turkey's largest privately owned defence company, Gİrgİn continued, "We at Otokar export the vehicles we manufacture for the defence industry to over 30 countries in five continents. Nearly 30 thousand armoured vehicles are actively serving at various locations and high-risk territories across the world. Our clients with Otokar vehicles in their inventories are references for new clients. This year, we have taken our exports one step further with the agreement in cooperation with Tawazun, the leading investment company in UAE. From now on, we will not only export products but also our innovation and technology capabilities."

#### VEHICLES SHOWCASED AT IDEF 2017

Otokar's wide product range is exhibited at booth 712 in Hall 7 for four days. All vehicles exhibited are listed below:

- The prototype of Turkey's national main battle tank ALTAY, counting days to start serial production
- ALTAY-AHT, Urban Operations Tank,
- TULPAR-S Amphibious Tracked Armoured Gun Carrier
- ARMA 8x8 Armoured Combat Vehicle, with Otokar's new MIZRAK-S 30 mm turret system
- ARMA 8x8 Armoured Combat Vehicle, with MIZRAK-30 mm turret
- ARMA 6x6 Command Control Vehicle, with BOZOK 12,7 mm MKT turret
- ARMA 6x6 Armoured Personnel Carrier, with KESKİDİN DUAL turret
- COBRA II 4x4 Reconnaissance/Surveillance



#### Vehicle

- COBRA II 4x4 Tactical Wheeled Armoured Vehicle
- COBRA II 4x4 Armoured Personnel Carrier, with BAEhOK turret
- COBRA 4x4 Tactical Wheeled Armoured Vehicle, 5-door version, with KESKIN turret
- URAL 4x4 Armoured Single Cab Pickup
- URAL 4x4 Personnel Carrier
- KAYA II Mine Resistant Personnel Carrier
- ISV – Armoured Internal Security Vehicle

Other vehicles by Otokar, namely 3 different COBRA and COBRA II vehicles are exhibited at the Aselsan booth, while a model of RABDAN, the 8x8 armoured vehicle that will be produced for the United Arab Emirates Armed Forces, is displayed at the booth of Al Jasoor, the joint venture company.

### **ALTAY COUNTING DAYS TO SERIAL PRODUCTION**

The prototype of the ALTAY main battle tank, Turkey's largest land systems platform, which is counting days to serial production is also on display at the Otokar booth at IDEF 2017. Designed and developed to meet the demands and expectations of the Turkish Land Forces against present and future threats, ALTAY is the world's most modern main battle tank with its specifications. With Otokar as prime contractor, the ALTAY project was launched in 2009, and the main battle tank, with increased survivability, mobility and firing power, has delivered superior performance in challenging tests conducted in all climatic and terrain conditions for the last two years. The "Qualification Tests" conducted by the Undersecretariat of Defence Industry, and Land Forces Command on ALTAY, which has achieved very high accuracy in firing tests carried out for diverse scenarios in all kinds of weather conditions and distances, were completed in February 2017.

As the sole authorized company to receive the Call to Bid Document for 'Serial Production', also known as Phase II, for the main battle tank ALTAY to launch serial production, Otokar submitted its first bid on January 18, 2016, and its best and final offer (BAFO) on August 29, 2016. With all infrastructure requirements and line plans in place to launch production with the signing of the ALTAY serial production contract, Otokar also obtained the 'Production Permit' from the Ministry of Defence. In addition to the production of 250 ALTAY tanks required by the Land Forces Command over the course of five years, Otokar has also made annual capacity plans taking into consideration the export potential, minesweeping, rescue, engineering tank and other derivative and complementary vehicle needs.

The Undersecretariat of Defence Industry's evaluation process regarding the bid for the 'Serial Production' and 'Integrated Logistic Support' of 250 units of ALTAY is on-going.

#### **ALTAY-AHT URBAN OPERATIONS TANK**

ALTAY Urban Operations Tank (ALTAY-AHT) was developed by Otokar on the ALTAY Main Battle Tank (ALTAY MBT) Hull and Turret platform. With

asymmetric engagements that mostly transpire in residential areas increasing, Otokar has predicted that the modern armies' need for suitably equipped battle tanks would also increase, and designed ALTAY-AHT Urban Operations Tank with a special team of 20 in as little as five months. With its unique survivability, mobility and fire power capabilities ALTAY-AHT, Urban Operations Tank is differentiated from ALTAY MBT with its armour system, mission equipment and a suspension with torsion bars.

Key specifications of the ALTAY- AHT, Urban Operation Tank designed by Otokar are:

- Explosive Reactive Armour (ERA) and Bar Armour Systems are applied on the tank to enhance its survivability against guided and unguided ballistic missile attacks that pose great threat in 360-degrees for main battle tanks in hybrid and asymmetric combat conditions.
- Situational awareness improved with the addition of Telescopic Elevated Observation System (EOS), YAMGİ-Z system that enables 360-degrees awareness, and repositioning of remote control weapon stations (RCWS).
- The tank is fitted with a Jammer against remote control IED attacks. The Gunshot Detection System can identify the direction of sniper threats, the Laser Warning System can identify the threats by laser guided anti-tank missiles, and laser range finders that measure distance. The direction of the identified threat can be automatically smoked using the Soft Kill (Smart Smoke Curtain) System. The EOS, RCWS and tank turret can be automatically directed to the threat depending on the user's preference.
- The tank is fitted with a directional dozer blade that can be operated by the driver, and used for a variety of tasks such as preparing the defence lines, clearing the obstacles on the battlefield, and filling the tank trenches.

### **OTOKAR TULPAR-S: GUARDIAN OF THE WARRIORS**

Named after the mythical winged-horse that guards the warriors in the Epic of Manas, TULPAR-S features technical and tactical specifications such as ballistic protection, structural design, electronic infrastructure, and low silhouette. Designed to meet the requirements of the modern battlefield, TULPAR-S, with superior mobility, high ballistic and mine protection, modern and flexible electronic architecture, is suited for various missions ranging from Gun Carrier to Personnel Carrier. The Gun Carrier Variant, an amphibious platform, of TULPAR-S is exhibited at IDEF.

### **FIRST INTRODUCTION OF THE NEW MIZRAK-S 30 TURRET AT IDEF WITH ARMA 8x8**

Otokar showcases four configurations of the multi-wheeled armoured vehicle range ARMA at IDEF. The ARMA family, which can be fitted with different weapon systems from 7,62 mm to 105 mm, is presented with the new MIZRAK-S 30 turret, introduced for the first time at IDEF.

The new MIZRAK-S Remote Controlled Turret

System is again fitted with a 30mm main gun co-axial 7.62 mm auxiliary machine gun. The turret is controlled by a gunner seated inside the vehicle under armour. 30mm armour piercing, high explosive and all other types of ammunition available for the cannon as well as optional programmable ammunition can be fired from the turret, which thanks to its compact size and low weight can be integrated into armoured vehicles with limited capacity and also uses the vehicle's payload and volume efficiently. MIZRAK-S features the latest generation digital fire control system architecture, and independently stabilized gunner sight utilizing highest performance cooled thermal camera, CCD camera and laser range finder, offering optional independent commander sight system and hunter-sniper feature. MIZRAK-S, which can be integrated to the existing command control systems, provides target tracking function to the gunner.

Highly modular and capable, the ARMA product family is an ideal platform for various purposes and a wide variety of missions, offering a low-profiled solution suited for existing and future combat conditions depending on the modern armies' survivability, protection and mobility needs. ARMA draws attention with its high combat weight and spacious interior, and thanks to its amphibious kit, is able to wade in water at 8kmh without any advance preparation.

The visitors get the chance to see two ARMA 6x6 for different missions, and two ARMA 8x8 with different battle weights at IDEF. These platforms are displayed with Otokar designed MIZRAK and MIZRAK-S 30 mm turret systems, BOZOK 12,7 mm MKT turret system, and KESKJİN DUAL turret systems.

A model of RABDAN 8x8, the armoured vehicle developed for the requirements of the United Arab Emirates Armed Forces, is displayed at the booth of Al Jasoor, the joint venture company of Otokar Land Systems with Tawazun's Heavy Vehicles Industry.

#### **URAL SINGLE CABIN ARMoured VEHICLE MAKES ITS DEBUT AT IDEF**

URAL, designed in particular to meet the present needs and future expectations of the internal security forces, has been successfully serving in the Turkish inventory, and now the Armoured Single Cabin Pickup is exhibited at IDEF.

The vehicle, developed to deliver vital supplies such as fuel, food and water to troops deployed in dangerous and risky regions, can also be used by for refuelling within the operation sites of the police forces and soldiers. With armoured cabins, URAL ensures the personnel's safety in these missions.

The vehicle has an armoured cabin, engine compartment, and a 1+1 seating capacity. The vehicle is also fitted with a 360-degree revolving gun-ring. The compartments in the rear are designed so that they can be easily and quickly change by the personnel using a special fixing mechanism, ensuring fast configuration for different missions.

The URAL Single Cabin Pickup displayed at IDEF 2017 features a "pillow tank" and supply compartments

to carry water or fuel to operation sites. The special compartment in the chassis helps to carry meal ingredients to the personnel on the field. The platform above the compartment holds two pillow tanks suited to carrying fuels. These flat tanks can be folded when not in use, and stored without taking up much space. Alternatively the rear body can be exchanged within minutes with a fuel tank with 1500-litre capacity.

An armoured personnel carrier variant of URAL, which offers superior mobility, protection level, and driving safety, is also exhibited at IDEF 2017.

### **Defence Industry**

#### **Supacat wins Queen's Award for International Trade for Outstanding Short Term Growth**



Supacat has won the Queen's Award for International Trade for Outstanding Short Term Growth. The Queen's Enterprise Awards are the UK's most prestigious business awards and announced on HM The Queen's birthday. Supacat is an innovative engineering and design company, providing products and services globally, including specialist off-road wheeled and tracked vehicles.

Over the last three years its overseas earnings have grown from BJ2.5m to over BJ32m buoyed by a large Australian order for its Special Forces HMT Extenda vehicle, which has become the vehicle of choice for the world's elite Special Forces. Supacat has recently won Norwegian and New Zealand contracts for the vehicle and the company is actively pursuing emerging opportunities with new export customers for its family of military high mobility and protected vehicles, which includes the acclaimed 'Jackal' and 'Coyote' operated by the UK Armed Forces.

"This is wonderful news for our business and we are very proud to be a winner of this very prestigious award. All the stakeholders of the business are delighted and are enthused to continue to pursue first class export opportunities especially recognising the national need for exports during these changing times. We are particularly proud of this award given the challenging circumstances UK Defence businesses face in selling their products to international customers and into one of the most openly competitive home markets. Financing exports is one of the challenges and we are grateful for the support we received from UKEF and RBS," said Nick Ames, Chief Executive Officer.

Established in 1980 and headquartered in Devon,

Supacat's growth has been driven by the UK defence sector, which continues to be a core business. It is part of SC Group which has diversified into providing engineering solutions to the oil and gas, nuclear, marine and renewable sectors through investment into developing specialist vehicles and services and actively engaging in new international markets including the USA, Middle East and China.



## Exhibitions

### FNSS Showcases the Future of Land Platforms at IDEF 2017



Continuing to expand its product family with innovative products, FNSS is launching new vehicles and displaying the latest situation with its new platforms at IDEF 2017. Visitors of FNSS' stand will also find the opportunity to directly see and touch the future of land platforms.

Displaying its broad range of solutions and capabilities, which include logistic support and modernisation for land platforms, FNSS will feature at its stand the following vehicles and weapons systems, which are all in the highest segment of their respective classes:

- KAPLAN MT Modern Medium Weight Tank
- KAPLAN-30 New Generation Armoured Fighting Vehicle
- KAPLAN-20 New Generation Armoured Fighting Vehicle
- PARS III 8x8 Tactical Wheeled Armoured Vehicle
- PARS III 6x6 Tactical Wheeled Armoured Vehicle
- PARS SCOUT 6x6 Special Purpose Tactical Wheeled Armoured Vehicle
- PARS 4x4 Anti-Tank Vehicle
- TEBER-30 Two-Man Turret
- TEBER-30 Remote Controlled Turret

At the exhibition, FNSS will be launching the KAPLAN-30, the PARS III 8x8 and PARS III 6x6 Tactical Wheeled Armoured Vehicles, the PARS SCOUT 6x6 Special Purpose Tactical Wheeled Armoured Vehicle, the ACV Modernisation, and the TEBER-30 Two-Man Turret. Following the initial launch of its design concept in Indonesia, the KAPLAN MT Medium Weight Tank prototype will be showcased for the first time in this event.

K. Nail Kurt, General Manager and CEO of FNSS, summarised the progress FNSS has made thus far as follows: "In line with the strategic plan we laid out five years ago, we acted proactively by investing in the technologies and capabilities required by both the Turkish Armed Forces and armies around the world. The result was our family of tracked armoured combat

vehicles from 15 to 30 tons, capable of responding to different requirements; our family of wheeled armoured vehicles from 4x4 to 8x8; and our family of armoured engineering vehicles that comprises the SAMUR and KUNDUZ. In addition to these already existing families, we are now preparing to introduce the KAPLAN MT Modern Medium Weight Tank and the ZAHA Amphibious Armoured Assault Vehicle. Furthermore, we also meet our customers' weapon-related needs through our manned and unmanned turrets equipped with 25, 30 and 40 mm weapons. Today, with its wide-ranging product family, and the effectiveness and technology that characterises its products, FNSS stands as one of the world's leading land platform manufacturers."

Concerning the future, Kurt also gave the following clues indicating a larger FNSS: "In recent times, FNSS took part in various projects involving the design and serial production of the PARS 4x4, KAPLAN 15, ACV 30 and ZAHA vehicles in Turkey. Overseas, it also achieved a new and significant export success with the PARS 6x6 and PARS 8x8. All these accomplishments will, within a period of one or two years, take the company's annual turnover to the region of \$500 million. Under our new strategic plan, our goal for the upcoming period is to reach a turnover of \$1 billion. We will achieve this both with our current product family and the new platforms we will be introducing to this family. Over the past years, FNSS have shown itself to be a company capable of laying out the right strategies and becoming successful by implementing them. There is no doubt in my mind that the company will once again do the same within the period covered by our new strategic plan."

Kurt's concluding remarks were concerning FNSS' customers – the company's *raison d'être*: "FNSS is a company which has handled each one of its business endeavours with great diligence and attention since the day it was founded. We add value to our customers, starting all the way from the tender process. And even when we are not the one to win a tender, we know that FNSS' inputs and approaches have the effect of improving the tender's schedule, budget and quality parameters. FNSS is the Turkish Armed Forces' largest supplier in terms all the different parameters, such as the number and types of vehicles in inventory. Moreover, FNSS has always ensured the continuity of its contacts with the foreign countries it is doing business with. Even after the initial contracts are executed, it continues to forge new deals and to maintain its presence in that country through integrated logistic support activities. We are working on joint developments projects for the AV8 in Malaysia and the KAPLAN MT in Indonesia. In Saudi Arabia, we are operating a state facility with our local partner. FNSS offers its overseas clients the best solution for armed forces, as well as the most suitable collaboration models for local defence industries. The prime reason why we are looking to the future with confidence is the satisfaction of our customers. I can confidently state that in the coming period, we will



continue to keep customer satisfaction at the highest level."



### Defence Industry

## Oshkosh Defense Delivers Proposal For FMTV A2 Production



Oshkosh, Wis. -- Oshkosh Defense, LLC has submitted a proposal in response to the U.S. Government's Request for Proposal (RFP) for Family of Medium Tactical Vehicles (FMTV) A2 production effort. Oshkosh's FMTV A2 proposal addresses the U.S. Army's need for increased payload and improved survivability, ride quality, and mobility.

Oshkosh Defense's FMTV A2 proposal is in response to the U.S. Army's competitive RFP that requires bidders to validate and produce an upgraded FMTV A2 fleet of vehicles with improved payload, underbody protection, ride quality, mobility, engine power, electronics, diagnostics, and safety enhancements. The Firm Fixed Price (FFP) and Cost Plus Fixed Fee (CPFF) requirements contract will establish pricing for up to seven order years. The Government can buy over 2,400 trucks and 1,200 underbody kits across the contract. The scope of work includes delivering upgraded vehicles for test and logistics development as soon as 450 days after contract award, expected in the spring of 2018.

The future generation FMTV A2 will be comprised of 16 models and associated trailers capable of carrying payloads ranging from 3-ton to 10-ton, and performing a wide range of duties from supporting combat missions, to relief efforts, to logistics and supply operations. The Oshkosh FMTV A2 features parts commonality that results in streamlined maintenance, training, sustainment and overall cost efficiency for the U.S. Army, Army Reserves, National Guard, and U.S. Air Force.

Oshkosh Defense has manufactured and sustained more than 150,000 Tactical Wheeled Vehicles for the U.S. DoD and its allies. Oshkosh Defense was first awarded the FMTV contract following a competitive evaluation in 2009 and, to date, has delivered more than 35,000 FMTV trucks and trailers while saving U.S. taxpayers more than \$2 billion. The U.S. Department of Defense recognized Oshkosh Defense with the Value Engineering Achievement Award for improvements that resulted in millions of dollars in cost savings for the U.S. Army, as well as improved performance and reliability.



### Contracts

## L&T Wins Largest Private Sector Defence Order for Artillery Guns



Mumbai -- Larsen & Toubro, India's multinational engineering conglomerate, has entered into a contract with the Ministry of Defence (MoD) for supply of 100 units of 155mm/ 52 calibre Tracked Self-Propelled Gun systems to the Indian Army.

The contract valued at about ₹ 4500 crore, is the largest order placed by MoD on an Indian private company.

This win affirms L&T's position as India's leading private sector defence company with capabilities to design, develop and manufacture state-of-the-art platforms and systems for the Indian armed forces.

L&T, supported by its South Korean technology partner Hanwha Tech Win (HTW), had bid for this 'Buy Global' acquisition program of MoD in 2011. Among 4 bidders to the program RFP, L&T emerged as the sole qualified bidder, after a series of User Trials and Evaluations, based on the performance of the K9 VAJRA-T self-propelled Howitzer.

The K9 VAJRA-T gun is an enhanced version of HTW's K9 Thunder – a world class self-propelled Howitzer, customised and co-developed by L&T & HTW to suit the specific requirements of the Indian Army including desert operations. HTW's K9 Thunder self-propelled Howitzer is among the best in the world with over 1,000 units already in service in Korea and few other countries.

This contract embodies the Government's 'Make in India' initiative. It envisages delivery of the 100 guns in 42 months with associated engineering support package and maintenance transfer of technology to support these Howitzer regiments throughout their life cycle. These guns will have over 50% indigenous content and will be delivered from L&T's manufacturing facilities, including a new Armoured Systems Complex at Hazira.

This program sets new benchmarks in co-development and co-production of defence systems by any Indian defence company in collaboration with an international technology partner.



### Defence Industry

## Elbit Systems Presents SPEAR MK2 – Latest Version of the Fully Autonomous Mortar System for Lightweight Combat Vehicles

Elbit Systems will present its latest version of the Spear mortar system – Spear MK2 – at the International Land Warfare and Logistics Conference in Latrun, Israel (May 16-18).



The Spear MK2, an upgraded version of the operationally proven Spear mortar system, is a 120 m<sup>2</sup>m fully autonomous modular mortar system. The Spear’s latest version has a high recoil reduction capability, while not affecting the Cardom mortar system and the Spear’s well known effectiveness. The mortar system is easily installed on a variety of lightweight combat vehicles allowing agility and performance of tactical operations.

The upgraded system provides improved situational awareness, wider area coverage, quick deployment and has autonomous or manual activation requiring only two-three crew members. The mortar system is deployed and operational within only sixty seconds, equipped with a command and control system providing battlefield management and situational awareness capabilities, fire missions’ prioritization and monitoring of personnel assignments.



### Defence Industry

## General Dynamics European Land Systems handover the first PIRANHA Wheeled Armoured Vehicle to Denmark



Kreuzlingen (Switzerland) -- The PIRANHA, the latest member of the PIRANHA family of 8x8 wheeled vehicles of General Dynamics European Land Systems (GDELS), which has been selected by the Danish Defence Acquisition and Logistics Organization (DALO) for the Armoured Personal Carrier (APC) requirement, enters the next stage in the procurement program.

After the selection in 2015 and only 16 months after contract signature, the first vehicles in serial configuration have been handed over to DALO in the ceremony today at General Dynamics European Land Systems-Mowag (GDELS-Mowag) facilities in Kreuzlingen (Switzerland).

The first seven pre-series vehicles, which are built in the Infantry Vehicle configuration, will now undergo a comprehensive test program, starting in the second half of 2017. The test program includes climate acceptance tests (hot and cold conditions), a verification acceptance test and will be concluded with the user acceptance test by the end of 2017. Upon successful completion of the test program, deliveries will start early in 2018.

The Danish Defence Acquisition and Logistic Organization (DALO) signed the contract for the delivery of 309 PIRANHA Armoured Personal Carriers in six variants (Infantry, Command, Ambulance, Engineer, Mortar and Repair), as well as a multi-year sustainment contract for the through life support of the vehicles in the future.

### PIRANHA – Adaptable for Operations across the Spectrum of Conflict

PIRANHA has been designed from the outset with adaptability, flexibility and growth capacity as the corner stones of the design. Wheeled armoured combat vehicles now form the core of a deployable land forces combat power and for this reason they need to be effective across the complete spectrum of conflict from peace keeping countering insurgency. PIRANHA has the capacity to fill all battlefield roles such as APC, Ambulance, Repair and Recovery, Command, Mortar including Direct Fire capability with turrets of up to 120 mm calibre. This provides growth potential to secure a long service life for the vehicle as new technologies emerge and need it.

### PIRANHA - The New Survivability Benchmark

The PIRANHA sets a new survivability benchmark for the wheeled armoured combat vehicle class and provides the highest levels of mine, improvised explosive device (IED) and ballistic protection. PIRANHA has a next generation, full coverage, modular survivability system that has been integrated in the vehicle design from the concept stage. This system provides unparalleled all round protection, particularly in the wheel well area that has traditionally been vulnerable to IEDs on wheeled armoured combat vehicles. In addition to these modular systems, substantial advances have been made in crew ergonomics, energy absorbing seating and occupant restraint systems that further improve the survivability of the PIRANHA when facing the threats of today and tomorrow.

### PIRANHA – Unrivalled Mobility and Performance

PIRANHA features the latest height adjustable McPherson strut suspension technology which endows the vehicle with an extraordinary level of cross country mobility. This suspension in combination with the high output power pack, fourth axle steering and integrated driver support systems ensures PIRANHA has the highest level of terrain accessibility and is the most agile wheeled armoured combat vehicle available today.





## Contracts

### The 8x8 CAESAR® artillery system has been selected by Denmark to equip the Danish land forces



Versailles -- Nexter, the leading French land defense systems manufacturer has been awarded a contract by the Danish Defence Acquisition and Logistics Organization (DALO) for the supply of 15 (plus 6 as an option) 8x8 CAESAR® artillery systems to the Danish Army.

The CAESAR® 155mm wheeled self-propelled howitzer has been constantly deployed by the French Forces in combat operations since its entry into service in 2009: in Lebanon, Afghanistan, Mali and currently in Iraq. The CAESAR® is recognized worldwide as striking the best balance between the simplicity of towed artillery and the mobility and survivability of a self-propelled system.

It provides customers with a highly flexible, deployable and affordable full spectrum solution for indirect fire support. Not only is the CAESAR® very accurate, it also has the lowest maintenance costs on the market for a mobile artillery system. Over 300 CAESAR® systems have already been ordered by 5 different countries.

With the 8x8 CAESAR® configuration, Nexter offers an artillery system that meets the current and future requirements of the Danish army with an improved operational autonomy and a platform offering significant growth potential for further adaptation. The involvement of Danish industry in the fulfilment of the contract will be essential, in particular for the 10-year sustainment of the Danish CAESAR® systems. The acquisition of CAESAR® by the Danish Army will also naturally provide with opportunities to further deepen the already strong cooperation between the Danish and French armies.

“We are proud to support such a longstanding ally of the French Army and member of the NATO alliance” commented Stephane Mayer, CEO of the Nexter Group. He also added “This first success for the 8x8 CAESAR® configuration confirms the relevance of our vision and strengthens our dedication to meeting the fast-moving and specific needs of our customers”.

