

# Army Guide monthly



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## Defence Industry

### Arquus Unveils Its New Identity On May 24th 2018



On the evening of May 24, 2018, Arquus invited 450 prominent figures from the defense world to celebrate its new corporate identity. During the plenary session, Emmanuel Levacher, the CEO of Arquus, presented the company's new identity, explaining the long-term considerations that motivated the change.

After drawing some lessons from the century-old history of the company's brands, he gave the floor to various Executive Committee members who took turns outlining different aspects of the new strategy. They showed the concrete ways in which Arquus would be capable of honoring its commitments and continually improving in order to fully meet its business partners' expectations. The evening was an opportunity to present the company's capabilities in terms of innovation, services, and system integration.

Speaking from Gothenburg in Sweden, Martin Lundstedt, the CEO of the Volvo Group, reiterated his confidence in Arquus' management team and pledged the Group's full support for the company's success.

In a convivial atmosphere, Arquus staff members were then able to mingle with the defense stakeholders in attendance, a reminder that the success of weapons often depends on close collaboration between manufacturers and military users involved in a co-design process.

Through this event, Arquus reaffirmed its commitment to defense and security forces and its emphasis on innovation as the driving force for its future development.



Land Systems (GDELS) will present a new variant of its advanced 8x8 wheeled infantry fighting vehicle PIRANHA IFV, at the XIII International Defence Exhibition HEMUS 2018 between May 30 and June 2 in Plovdiv, Bulgaria.

The PIRANHA IFV will be fitted with the latest Elbit UT30MK2 unmanned turret armed with an Orbital ATK Armament Systems 30 mm MK44 dual feed cannon, 7.62 mm co-axial MG, a pod of two anti-tank guided weapons (ATGW) and an advanced digital Communication and Information System (CIS) from General Dynamics Mission Systems. The vehicle is a candidate for the Bulgarian Army's Battalion Battle Group (BBG) acquisition project.

"It is key for us to present to our customer various options of armament systems so they can choose the optimum for their specific needs," said Thomas Kauffmann, General Dynamics European Land Systems Vice President International Business & Services.

In 2017 General Dynamics European Land Systems presented the PIRANHA IFV with a medium calibre armament system from Rafael Advanced Defense Systems to the Bulgarian Army at the Military polygon Tylbeto near the city of Kazanlak, Bulgaria.

The PIRANHA is one of the most successful Western 8x8 wheeled armoured vehicle in the world. More than 12,000 vehicles of the PIRANHA family are in service with 20 user nations including and several European countries: Belgium, Denmark, Ireland, Romania, Spain, and Switzerland.

General Dynamics European Land Systems has developed a tailor-made industrial participation and growth strategy for Bulgarian companies, which will create sustainable business opportunities. At this year's Hemus exhibition General Dynamics European Land Systems and General Dynamics Mission Systems will sign collaboration arrangements with various key Bulgarian industry partners with regard to the upcoming BBG acquisition project.

"Over the last three years in Bulgaria we have developed a strong team of local companies and partners to be able to respond to the BBG project not only with a superior vehicle offering but also to offer unmatched economic benefits to Bulgaria and its local industry," said Thomas Kauffmann.



## Exhibitions

### General Dynamics European Land Systems presents a new variant of PIRANHA IFV at the HEMUS Exhibition 2018



PLODIV (Bulgaria) -- General Dynamics European

## Exhibitions

### Otokar to Present ARMA 8x8 in HEMUS 2018

Otokar, the largest privately owned company of Turkish defence industry, participated in HEMUS 2018 with its ARMA 8x8 armored fighting vehicle.

Otokar, a Koç Group company, with products used in more than 30 countries across the world, attends at HEMUS Exhibition set to take place between May, 30th and June, 3rd, 2018 in Plovdiv, Bulgaria. During the five-day exhibition Otokar will promote ARMA 8x8 armored fighting vehicle at its stand.

Emphasizing Otokar's outstanding success in international markets, General Manager Serdar Çurğöz said "Our strength in the defense industry is driven by our experience, engineering and R&D capabilities, and successful use of technology. Today over 30,000 Otokar military vehicles are in service in many different parts of the world. The success of our vehicles has always been a reference for new orders. Otokar as a registered NATO and United Nations supplier is ready to meet Bulgarian Armed Forces' needs with its wide product range. Apart from the our displayed ARMA 8x8 we are well aware the further potential in the country for our 6x6 and 4x4 vehicles. With the advantage of having such wide product range, we also desire to contribute to Bulgarian economy through creating added value in the country."

#### **ARMA: MODULAR 8x8 ARMORED VEHICLES**

Otokar presents ARMA 8x8 in HEMUS; the modular multi-wheeled vehicle with superior tactical and technical features. Thanks to its superior mobility, high mine and ballistic protection, medium and high calibre weapon system integration options; ARMA is capable to serve modern armies in the real battlefield, peace keeping and human relief operations in most difficult terrain and climatic conditions. ARMA 8x8; is available in various types of configurations such as Personnel Carrier, Infantry Fighting Vehicle, Fire Support Vehicle, Mortar Carrier, Short and Medium Range Air Defence, Mobile Gun Carrier, Command and Control Vehicle with optional amphibious capability. ARMA is suitable for integration of various weapon systems from light machine gun weapon stations up to 25-30 mm medium calibre cannon and 105 mm cannon.



#### **Future Technologies**

### **Uralvagonzavod demonstrates BMP-3 with AU-220M weapon station**



Uralvagonzavod Corporation (UVZ, part of Rostech) has published video of combat shooting at the range from a gun of the caliber of 57 mm, mounted on the weapon station of BMP-3 IFV. The weapon station can be remotely controlled from a position outside the vehicle.

As explained in the corporation, 57-mm AU-220M weapon station, created by the Burevestnik Central Research Institute (included in the UVZ), can be remotely controlled. "Its newest gun not only has increased accuracy of shooting and armor penetration, but it can be controlled remotely," the corporation noted.

Such a function makes it possible to use BMP as a highly effective firing point, capable of destroying both

ground and air targets. The crew in this case can completely leave the vehicle.

The video demonstrates the ability of the new vehicle to hit targets with high accuracy. Also shown is the accuracy of the firing with the help of tracer projectiles caliber 57-mm.



#### **Defence Industry**

### **Rheinmetall ships 200th Puma IFV to the Bundeswehr**



The 200th Puma infantry fighting vehicle earmarked for the Bundeswehr has just rolled off the assembly line at the Rheinmetall plant in Unterlößnitz in Lower Saxony. It is also the 100th Puma manufactured by the Düsseldorf-based tech enterprise, part-owner of the joint venture tasked with producing the vehicle. The jubilee vehicle will soon be arriving at the Bundeswehr's force integration organization in Munster a.d. Urtze, likewise located in Lower Saxony.

The Puma IFV is the raison d'être of Projekt System & Management (PSM) GmbH, the fifty-fifty joint venture of Rheinmetall and Krauss-Maffei Wegmann in charge of developing and producing the vehicle as well as providing subsequent in-service support. (Each of the two partners is responsible for manufacturing half of the vehicles on order.) Just attained, this milestone shows that production of the Puma is in full swing and proceeding according to plan. The state-of-the-art infantry fighting vehicle is currently being integrated into the force structure of the German Army. Delivery of all 342 combat vehicles, which commenced in 2015, is scheduled for completion in 2020. In addition to the IFVs, the Bundeswehr has also taken delivery of eight driver training vehicles.

With the introduction of the Puma IFV by the Bundeswehr, the German mechanized infantry corps now has a new mainstay, one that represents a major departure in armoured vehicle design. The most advanced system in its class, the versatile Puma is perfect for operational scenarios in every climate zone. It sets new standards with regard to battlefield lethality, mobility, command and control, and situational awareness. Besides an array of modular, highly effective force protection features, the Puma boasts massive fire power and excellent network-enabled operations capabilities. This new infantry fighting vehicle is roomy enough to carry nine soldiers, yet compact enough to be airlifted into the theatre of operations in an A400M military transport plane.

Nor is Rheinmetall's role restricted to manufacturing half of all Puma IFVs: via PSM GmbH, the Bundeswehr has now contracted with the Group to expand the system's capabilities. These should keep the vehicle on the cutting edge for decades to come, while simultaneously improving possibilities for training. Among other things, this includes development of the new "turret-independent secondary weapon system", or TSWA, for the Puma, which will enable the use of non-lethal munitions, as well as installation of advanced visualization technology and displays.

A further order encompasses new resources for training Puma turret operators. Separate turret training systems, each consisting of a standard turret and the upper section of the Puma hull, will in future enable the commander and gunner to sharpen their skills without having to use the original equipment. And maintenance personnel can practise repairing and servicing turrets in an effective, highly realistic way. This saves resources and leads to lower costs by reducing wear and tear on the actual vehicles, which moreover are never tied up due to routine training commitments. This makes it possible to structure training operations much more flexibly.

Other orders include the manufacture and supply of airburst-capable 30mm x 173 cal. ammunition as well as a firing apparatus, special tools and spare parts.

NATO and NATO-associated nations are currently showing a keen interest in the Puma. The vehicle has demonstrated its outstanding capabilities in multiple comparative trials.



## Defence Industry

### BMPT Terminator will receive a remote blasting ammunition



The Pribor Research and Production Association, which is part of Techmash (Russia), is developing the state-of-the-arts ammunition with a remote blasting, said Yury Nabokov, general director of the company.

According to his statement, the latest developments also include ammunition for 30-mm automatic guns of the BMPT Terminator. The company promises that by 2020 these munitions will be ready for serial production.

Nabokov noted that at present company are aimed at completing the work on the creation of an ammunition of a caliber of 30 millimeters with remote blasting. At the moment, the small batch is already preparing for the state tests. In total, the entire cycle should take no more than two years.

To date, the Russian Ministry of Defense has signed a contract with Uralvagonzavod for the delivery of the first batch of BMPT Terminator in the third or fourth quarter of 2018, which will immediately go to the test site of the 90th Vitebsk-Novgorod twice Red Banner Guards Tank Division in the Chelyabinsk Region. Specialists and military men in time of the tests will determine the forms and methods of using this vehicle in army.



## Exhibitions

### The Transatlantic Partner for Land Defense in Europe - General Dynamics European Land Systems premiers four new offerings at EUROSATORY 2018



MADRID -- General Dynamics European Land Systems (GDELS) will present four new offerings at the EUROSATORY Defense & Security International Exhibition 2018, between June 11th and June 15th in Paris, in Hall 5A – Stand No. E839.

The company will showcase new variants of the ASCOD family of tracked vehicles:

- ASCOD Medium Main Battle Tank (MMBT): With a GVW of 42 tons, it is fitted with a modern 120mm manned turret system, armed with a 7.62 mm coaxial machine gun. The 120mm smoothbore gun fires standard NATO ammunition and is coupled to a computerised fire control system giving the commander and gunner stabilised day/thermal sights incorporating a laser rangefinder.
- ASCOD Infantry Fighting Vehicle (IFV): With a GVW of 35 tons and increased volume for the rear troop compartment, it is fitted with an unmanned turret including a 30mm dual feed cannon, 7.62mm co-axial MG, a pod of two anti-tank guided missiles (ATGM), a Hard Kill Active Defence System and an advanced 360 degree sight system for increased situational awareness.

Both ASCOD vehicles have been developed using General Dynamics European Land Systems' new "Common Base Platform Design" (CBP) with modular capability and open vehicle architecture with three power-pack solutions between 530, 600 and 800kW, either steel tracks or rubber bands and multiple configurations up to the crew of three plus 8 dismounts. The advanced CBP design ensures all ASCOD variants are on one common platform for a reduced logistics footprint. This also facilitates cross-national vehicle manufacturing and operational interoperability between different military users in response to the political vision to foster defence cooperation across Europe.

**A new version of the PANDUR 6X6 will be on display:**

General Dynamics European Land Systems will introduce the PANDUR 6x6 EVO, the new version of its proven PANDUR vehicle family. With a GVW up to 18.5 tons, the PANDUR 6X6 EVO in its Armored Personnel Carrier (APC) configuration has been selected by the Austrian Army. Due to its new innovative hull design, driveline technology, and power-pack, the compact 6x6 vehicle provides a significantly increased level of protection, payload, and mobility while accommodating a crew of 11 soldiers (3+8). The PANDUR 6x6 EVO is fitted with a 12.7mm Remote Controlled Weapon Station.

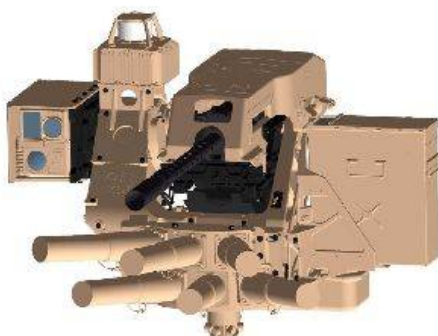
**A new medium mechanized bridge system:**

The new Variable Folding Bridge (VFB) is a flexible and modern bridge system, which can be temporarily or permanently fitted on various medium-weight wheeled and tracked armored vehicles. With the Bridge Launching Mechanism (BLM) by Pearson Engineering, the Variable Folding Bridge can be attached to the vehicle via a standard Pearson Engineering Jettison Fitting Kit. The VFB on display will be mounted on a standard 8x8 wheeled armored vehicle PIRANHA 3 and has a length of 15 meters with a load capacity of MLC50.

In cooperation with General Dynamics Mission Systems, GDELS will display an EAGLE 6x6 Command Post fitted with various network capabilities like Satellite on the Move (SOTM) and Battlefield Management System (BMS). It emphasizes General Dynamics' advanced system capabilities and track record in the area of Digitized Land Base Operations (D-LBO).

**Exhibitions**

**FN Herstal Enhances Self-Protection Capabilities of deFNder RWS with ANTARES Situational Awareness System**



For the first time in its history, FN Herstal will display its deFNder® Medium Remote Weapon Station (RWS) together with the ANTARES optronic system at the international EUROSATORY exhibition, due to be held in Paris, France, from June 11 -15, 2018.

The ANTARES, designed and developed by Thales, is an innovative, multifunction optronic system composed of a single, suprahemispheric, high-resolution sensor and

a calculator. It provides 360-degree local situational awareness as well as mobile targets and laser warning detection capabilities.

The deFNder® Medium equipped with ANTARES is now available with additional, significant benefits, including real-time perimeter surveillance all the more important given its location on a platform high point and its minimal parallax in rotation. Additionally, the deFNder® Medium features a new rally-to-threat mode on threats detected by ANTARES. Lastly, this is a fully autonomous solution, simplifying the integration for OEMs.

The deFNder® Medium on display at the FN Herstal booth at EUROSATORY will feature both the .50 cal FN® M3R machine gun, capable of firing 1,100 RPM, and smoke grenade launchers, therefore demonstrating combined offensive and defensive capabilities. The RWS will be integrated onto the THeMIS unmanned ground vehicle (UGV) from Milrem Robotics.

In addition to its RWS range of products, FN Herstal will have its full range of solutions on display, including small caliber firearms and ammunition, less lethal systems, FN® e-novation solutions and further integrated weapon systems for airborne, land and sea applications.

**Exhibitions**

**Eurosatory 2018: Patria 6X6 - Multifunctional transport capacity far into the future**



Patria launched at Eurosatory a new vehicle - Patria 6x6, which brings the basic principles behind its predecessor into the present day, with its multifunctional transport capacity and modularity that adapts easily to the customer's needs.

Patria 6X6 is a successor to the Pasi Armoured Personnel Carrier and to complement the vehicle fleets of customers of the legendary Patria AMV 8X8. Patria 6X6 is a multipurpose transport vehicle. The chassis structure is based on the same components as the AMV, but with one less axle. The vehicle is driven by all three axles and steered from the front two, or all three, depending on its equipage. Optional equipage can be added to bring the 6X6 closer to the AMV. For example, various ballistic and mine protection levels, weapon systems, self-protection systems and other interior equipment are available.

Patria 6X6 can be equipped with a variety of weapon

systems and, if required, the Patria Nemo 120mm mortar system. The 6X6 has a maximum load-bearing capacity of 8.5 tonnes. The protection of the armoured 6X6 reaches STANAG level 4, which means protection against even heavy machine gun fire. Due to the 6x6's good load carrying capacity, it has better protection than previous Pasi APCs. Its mine protection is top-notch, even at the basic level, but up to 10 kilos of mine protection can be achieved.

Boarding and leaving the 6X6 is easy. In addition to the crew of 2-3 persons, the vehicle has seats for ten combat troops, depending on its purpose and layout. The driver can easily adapt to the controls in the 6X6's truck-like cab. The vehicle is designed as a simple and cost-effective truck-like solution. In terms of durability, it will continue along the trail pioneered by its predecessor, the Pasi. The 6X6 is also a clearly unified concept in terms of its manufacturing technology. If necessary, the final assembly and equipage can easily be completed by a partner in the destination country. The 6X6 meets NATO standards and is ideally suited to e.g. peacekeeping missions anywhere in the world. The vehicle's life cycle support is an integral part of the Patria 6X6.

"There has long been demand on the market for a successor to the Pasi Armoured Personnel Carrier, which has been in production since the 80s. The new 6X6 brings the basic principles behind its predecessor into the present day, with its multifunctional transport capacity and modularity that adapts easily to the customer's needs", says Janne Rakkilainen, Vice President, Vehicle Systems, Patria's Land business unit.



## Exhibitions

### BAE Systems debuts iFighting® for combat vehicles at Eurosatory



iFighting®, a concept that fuses together data from different systems within a combat vehicle, such as the CV90 MkIV, to filter through and prioritize the most critical information.

BAE Systems will present a new solution for addressing the challenge of battlefield situational awareness at the 2018 Eurosatory trade show in Paris this week.

Called iFighting®, the technology is designed to optimize vehicle and crew performance by harnessing data to enable faster decision-making in combat.

BAE Systems will be displaying the latest version of the CV90 Infantry Fighting Vehicle, known as the MkIV, integrated with iFighting®. The MkIV, the fifth

generation CV90, features advancements in speed, mobility, and electronics, and is being offered to the Czech Republic to replace its aging fleet of infantry fighting vehicles.

Based on technology integrated by BAE Systems, the iFighting® concept fuses together data from different systems within the vehicle to filter through and prioritize the most critical information. This allows the crew to make quicker and more effective decisions to improve overall performance on the battlefield.

"As we roll out new technology, we know that adding displays and panels to combat vehicles could potentially distract crews in an already-complex combat environment. The key was finding a way to help improve situational awareness and combat efficiency without adding to the crews' cognitive workload, and we believe we have done that with iFighting®," said Tommy Gustafsson-Rask, vice president and general manager of BAE Systems' Högglunds business, which designed and built the new CV90 MkIV. "iFighting® is not a product or a system. It is the core of system integration for the future armoured vehicle."

The CV90 MkIV will also have the fourth generation Electronic Architecture compatible with NATO-standard Generic Vehicle Architecture (NGVA), which allows crews to manage large amounts of live-stream data and is interoperable within the NATO Alliance. This step change will enable the introduction of autonomous crew support, machine-learning algorithms — including artificial intelligence capabilities — and augmented reality with the support of 3D map data to enable future adoption and growth.

"With advanced electronics, iFighting® creates a more combat-effective system by reducing the amount of information the soldier needs to process," said Mikael Segerman, BAE Systems Högglunds director for the Czech Republic. "This results in increased situational awareness to aid decision-making on the complex battlefield. iFighting® ultimately helps to improve the performance of an inexperienced crew, as well as amplifying that of an experienced team."

BAE Systems has partnered with several Czech companies to offer the CV90 MkIV to the Czech Army. The MkIV was unveiled earlier this year as the latest version of the combat-proven CV90, which is in service with numerous European nations.



## Exhibitions

### FNSS Showcases its New Generation Tracked & Wheeled Armored Vehicles at Eurosatory 2018

FNSS, continues to be the first choice of the armed forces of various countries, due not only to the high performance of its products, but also its contributions to the development of local industries. Aiming to expand its user base, FNSS will showcase the PARS III 8x8 and PARS 4x4 Wheeled Armored Vehicles (AMV) and the KAPLAN-20 New Generation Armored Fighting Vehicle (NG-AFV) at Eurosatory 2018, which all been developed to meet a broad

range of operational needs.



FNSS stands out as a company which can offer complete solutions both to armed forces that wish to procure the best available land platforms, and to countries that are seeking to develop their domestic industries. FNSS platforms and weapon systems meet the most stringent of requirements, practically setting world standards of their own, while its broad experience in collaboration and technology transfer is allowing it to acquire important work shares in projects in which users seek to promote the development of their own local industries.

FNSS' programs with the United Arab Emirates (UAE), Malaysia, Saudi Arabia, Oman and Indonesia all stand as success stories demonstrating the company's outstanding performance in this regard:

- Having delivered 133 ACV-15 vehicles to the UAE, FNSS continues to carry out the maintenance and management of these vehicles through its UAE office.
- FNSS forged its first relations with Malaysia through the ACV-15, and under three separate orders Malaysia purchased a total of 267 ACV-15s & ACV-19s in different configurations. The project also involved the transfer of technology and the final assembly of some of these vehicles – designated ADNAN by the end user – in Malaysia.
- When the Royal Saudi Arabian Armed Forces considered the modernization of different types of M113 Armored Personnel Carrier, FNSS not only offered them an effective solution, but also implemented it by assuming the operation of the Al-Kharj maintenance and repair facilities belonging to the Royal Saudi Arabian Armed Forces. Within the scope of successive contracts that involved three phases, FNSS modernized over 1,000 M113's to the M113A4 level.
- Pleased with its ADNAN tracked armored vehicles, Malaysia also selected FNSS for the development and local production of wheeled armored vehicles, purchasing a total of 257 AV8 GEMPITA platforms in 12 configurations, based on FNSS' PARS family of vehicles. Benefitting from the experience it gained with ADNAN, the Malaysian industry (DEFTECH – DRB-HICOM Defence Technologies) assumed the role of prime contractor in this project.
- Following the Malaysian example, Oman also selected the PARS product family to meet its wheeled armored vehicle requirements. Currently preparing to deliver a total of 172 vehicles in 13

configurations to Oman, FNSS will also provide local solutions to the vehicles' life cycle support and management requirements. While 145 of these vehicles will be PARS III 8x8 platforms, delivered in eight different configurations, the remaining 27 will be PARS III 6x6 platforms, and will be delivered in five different configurations.

- In line with evolving concepts of warfare, Indonesia identified a requirement for a medium-class tank. FNSS and its local partners jointly developed the KAPLAN MT, which is currently undergoing qualification tests.

A common feature of FNSS' activities in these countries is high user satisfaction, and the frequent follow-up of the initial contract with new contracts. This has led FNSS' business volume outside Turkey to pass the \$2.6 billion mark.

K. Nail Kurt, General Manager and CEO of FNSS, commenting about their international collaborations, said: "FNSS is a company with a deeply-rooted corporate culture of working as a team with both the user and local industry in different countries. In every country we go to, we adopt a holistic approach to projects by taking the entire life cycle into account. Our goal is to provide, from the very first delivery, the best systems in the world to our users, and to ensure that these systems remain as ready and effective as they were on their first day for their entire duration of use, until they are removed from the inventory. To achieve these goals, we adopt different cooperation models in line with our users' preferences. Based on the level of competence of local companies, we have successfully implemented a large variety of business models, ranging from technology transfer to joint development. We find the new opportunities ahead to be very exciting, and we are ready to forge new collaborations and to build new friendships."



## Exhibitions

### The Scarabee An Innovative Prototype



A major partner of the armed forces, Arqus boasts over a century of protection and mobility know-how. Its Defense and Security vehicles offer a large payload capacity, robustness and autonomy, guaranteeing the success of even the most delicate missions. Arqus vehicles are combat proven with fifty years of active duty in French Army operations.

Arqus is developing on its own equity, a vehicle which combines the most advanced technologies related to mobility, protection and collaborative combat : The Scarabee.

A successor to the VBL and heir to the Panhard armored cars, the Scarabee is a concept offering

avant-garde innovations and achieving unrivaled performance.

Offering collaborative ergonomics and maximal comfort, it will enable innovative energy management and exceptional payload.

Equipped with powerful and modern firepower, it will be an essential actor of collaborative combat. Moreover, simple vehicle maintenance will make it optimal for foreign operations.

Discover all the new innovations for Arqus at Eurosatory on booth F267, Hall 5A.



## Exhibitions

### Rheinmetall unveils the Lynx KF41 Next-Generation Combat Vehicle



At Eurosatory 2018 Rheinmetall presents its new Lynx KF41 infantry fighting vehicle (IFV) to the international public for the first time. Highly survivable, adaptable to diverse environments, extremely agile, hard hitting, and with huge payload reserves, the Lynx KF41 is a next-generation combat vehicle designed to confront the challenges of the future battlefield like no other.

Most experts agree that land forces will face unprecedented threats on the future battlefield, where emergent technologies have substantially changed the balance of power. Key technologies influencing armoured fighting vehicle (AFV) design for the future include anti-access/area denial systems that reduce the ability to gain and retain air dominance, electronic warfare systems that will deny reliable communications, enhanced artillery systems that restrict freedom of action, and advanced AFV designs that are difficult to defeat with existing systems.

In concert with the technology challenges of future combat, land forces need to be relevant across the full spectrum of conflict, including contributing to peace keeping operations, conducting counter-insurgency campaigns and engaging in general war-fighting against constantly evolving threats in diverse global environments.

It is with these challenges in mind that Rheinmetall has developed the Lynx KF41 family of vehicles and the companion Lance 2.0 turret, resulting in a revolutionary IFV with a level of adaptability, survivability and capacity not seen before in an IFV family.

Ben Hudson, global head of Rheinmetall's Vehicle Systems Division said, "With the Lynx KF41, the

Rheinmetall team has developed a truly innovative next-generation combat vehicle. The breadth of capabilities that a Lynx IFV provides soldiers results in a veritable Swiss Army knife that has unprecedented utility across the full spectrum of conflict. Its modular, adaptable survivability systems allow the vehicle to evolve through life, the high level of mobility will provide battlefield commanders great tactical flexibility in combat, and the diverse effects that the Lance 2.0 turret can generate allow the crew to deal effectively with a wide variety of battlefield situations".

**Adaptable.** The Lynx KF41 is a complete family of vehicles that utilises a common drive module and a flexible mission kit arrangement to allow any base vehicle to be configured as an IFV, an armoured personnel carrier, a command vehicle, a recovery vehicle or an ambulance. Changing from one configuration to another can occur within eight hours. This system provides significant total lifecycle cost savings due to base vehicle commonality, allowing customers to adjust force structures or develop new capabilities in an affordable and timely manner.

**Enhancing the vehicle's flexibility,** the sub-systems of the Lynx KF41 are highly modular and adaptable. The Lynx KF41 features a digital backbone with a generic open architecture that allows easy integration of new mission systems, while the entire survivability system is modular and upgradable to allow the vehicle to cope with the highly adaptive threats faced on the battlefield. Different survivability kits are available for peacekeeping situations, counter-insurgency operations in urban terrain, and mounted combat against a peer. No other vehicle can adapt to diverse environments across the full spectrum of operational challenges like the Lynx KF41 can.

**Highly Mobile.** The Lynx KF41 features the latest generation of propulsion technology with an 850 kW (1140hp) Liebherr engine and a proven Renk transmission. A flexible suspension system has been developed by Supashock, an Australian company, meaning the Lynx can be configured to carry various mission kits and survivability packages without compromising mobility. When configured for mounted combat operations with the Lance 2.0 turret and a survivability package suitable for peer-on-peer combat, the Lynx KF41 weighs approximately 44 tonnes. In this configuration it provides class leading mobility due the high power-to-weight ratio of 26 hp/t, while still leaving up to six tonnes of reserve payload for future growth.

**Survivable.** The modular survivability systems of the Lynx provide unprecedented flexibility for customers to cope with the wide variety of threats faced across the spectrum of conflict. The ballistic and mine protection packages can be easily exchanged, even in the field if needed, while the full spectrum of threats have been taken into account, including roof protection against cluster munitions. The Lynx KF41 with Lance 2.0 has been designed not only for passive and reactive systems, but also for an active protection system to defeat rocket-propelled grenades and antitank guided missiles.



Hard hitting. The Lance 2.0 turret is the next generation of the in-service Lance family and has been developed to improve its suitability for an IFV. Lance 2.0 has various enhancements that provide a troop of Lynx KF41 vehicles with a very high level of organic capability, thus allowing the troop to have a disproportionate effect on the battlefield. The Lance 2.0 features enhanced protection for critical subsystems against kinetic and fragmentation threats, improving system survivability during close combat. The next enhancement is the integration of the new Wotan 35 electrically driven cannon that fires Rheinmetall's proven and in-service 35x228mm ammunition family. Lastly, the Lance 2.0 has two flexible mission pods fitted to the left and right of the turret that allow installation of a variety of sub-systems to give the turret a specialist capability. Examples of customer-selectable mission pods include dual Rafael Spike LR2 ATGMs, non-line of sight strike loitering munitions, UAVs or an electronic warfare package.

The Lynx KF41 and Lance 2.0 once again show Rheinmetall's capabilities as a world-leading company in the fields of security and mobility.

"MMP, the world's only 5th Generation anti-tank guided weapon, now in service within the French Armed Forces, has been developed for both mounted and dismounted applications and is suitable for unmanned ground vehicle (UGV). With its 4km+ range and its two firing modes – lock on before launch (LOBL) and lock on after launch (LOAL) – the MMP gives to THeMIS UGV an unmatched capability to engage a target beyond line of sight. MMP allows, within remote operation, to engage very discreetly battlefield targets at ranges greater than the enemies counter fire, from behind cover and within structures in fighting in built-up areas. The MMP Firing installation deployed on UGV also provides an ISTAR (Intelligence, Surveillance, Target Acquisition, & Reconnaissance) capability and, through direct integration with a C4I network, delivers battlefield intelligence out beyond the platoon", added the former Colonel Francis Bordachar, military advisor of MBDA.

## Defence Industry

### Expal Presents a New Configuration of the EIMOS 81 MM Mortar System Integrated in a 4x4 Vehicle



EXPAL, a benchmark in the design and manufacture of technologies and solutions in mortar systems, showcased the latest functions of the EIMOS system at its stand, which can be visited at Eurosatory 2018 until 15th June.

### MBDA and Milrem Robotics to Develop Anti-Tank UGV

## Robots



The leading European missile systems designer and producer MBDA and unmanned vehicles manufacturer Milrem Robotics will begin developing the world's first unmanned ground vehicle (UGV) specially designed for anti-tank purposes.

The joint project will feature the IMPACT (Integrated MMP Precision Attack Combat Turret) system from MBDA that will be integrated onto the THeMIS unmanned ground vehicle by Milrem Robotics.

The system will be remotely operated and is in line with the system developers' main aim of exchanging humans on the battlefield for much more capable robots.

"One of the challenges in urban warfare is keeping anti-tank infantry hidden from the enemy's surveillance equipment that can very easily detect soldier's heat signature. The aim of our joint integration project is developing a system that has a low heat signature and most importantly – will keep infantry in a safe distance," explained Brig Gen (res) Alar Laneman, military advisor of Milrem Robotics.

EXPAL's EIMOS system, which has been in service since 2015, is the natural evolution of the conventional 81/60 mm mortar system. The EIMOS system mounts an 81 mm mortar (interchangeable with 60 mm) on a light 4x4 vehicle, providing mobility, greater safety by reducing maneuvering time, and efficiency by integrating a ballistic computer, an automatic aiming system and a command and control system. All this allows armies' capabilities to be increased in indirect fire support operations.

Alberto Fernández, Systems Product Manager at EXPAL, used the presentation to stress that "the modernization carried out in the new configuration of the system has brought improved accuracy and effectiveness in aiming, faster deployment (less than 20 seconds), and navigation without the need for GPS. Furthermore, the company has put a lot of effort into bolstering the systems and equipment, extending their working life, increasing their maintainability and reducing the cost of their life cycle."

EIMOS is a fully configurable, adaptable mortar

system that can be integrated in armies' main 4x4 tactical vehicles. Its hydro-pneumatic recoil absorption system transmits only a small fraction to the vehicle, thus ensuring safe firing for the crew, with a very low impact on mechanics and without the need for additional stabilizers.

The EIMOS system is part of EXPAL's one-stop shop solution, covering all needs in indirect fire support missions in infantry operations. This solution is rounded off with: mortar systems (60 mm, 81 mm, 120 mm), the fire control system (TECHFIRE), the advanced observation device in the form of mini UAVs (SHEPHERD-MIL), and the mortar unit tactical training simulator (eSIMOX).

## Robots

### Nexter, a company of KNDS, presents its strategy in the field of robots



Eurosatory – Parc des Expositions Paris-Nord Villepinte -- Nexter, a company of KNDS, presents its strategy for robots. On the basis of the experience acquired by its subsidiary Nexter Robotics through civil and military applications in the design of robotic platforms and systems, and thanks to its expertise in both architecture and integration of weapons, including teleoperated, on a wide variety of vehicles, Nexter expands its activity in the field of operational applications of robotics.

Thus, Nexter presents OPTIO®, its new range of versatile tactical robots designed to carry out various missions without exposing dismounted personnel: opening of routes, reconnaissance and observation, logistics or fire support. In parallel with OPTIO®, the NERVA® range of mini-robots continues to expand through the variety of its mission modules.

Nexter's efforts are focused on increasing the operational relevance of these robotic systems by pursuing three complementary areas of development:

- Versatility and modularity to equip these robotic systems with adaptability that will make the Forces more responsive to evolving threats,
- Integration of robots and drones into combat vehicles, towards the constitution of composite systems (Inhabited - Uninhabited),
- Development of supervised autonomy to allow the operator to focus on the core of the tactical mission.

On the occasion of Eurosatory exhibition, Nexter exposes an armed variant of the OPTIO® range. Combining Milrem's "THeMIS®" remote control

platform and a Nexter remote-controlled 20mm turret, OPTIO®-X20 will help preserve the lives of soldiers in high-intensity combat or when used in a hostile environment and provide the combat group with means of observation and fire support operated remotely under the control of the human operator.

Thanks to Nexter's development of innovative intelligent features on the mobility side, OPTIO®-X20 allows the operator to focus on its mission rather than navigation.

Frédéric Bouty, Nexter's Strategy Director, underlined "Nexter Group's pride in increasing its robotics offering and extending its partnerships to a dynamic European player in this innovative sector for the benefit of the armed forces".

## Exhibitions

### AxleTech Reveals Electric Independent Suspension Concept At Eurosatory 2018



AxleTech is combining its expertise in electric vehicle powertrain systems and independent suspension technologies to develop a next-generation 5000 Series Electric Independent Suspension Axle System concept. The eISAS™, as it is known, was unveiled at Eurosatory 2018, the largest international defense and security exhibition, in Paris, France.

Featuring custom-designed electric motors as part of the axle, this innovative concept acts as a complete electric powertrain system, eliminating the need for a traditional drivetrain, including engine, transmission, and gearboxes, which results in maintenance cost savings. The system is engineered for full battery electric vehicles (BEV), fuel cell range extender electric vehicles (FCEV), and internal combustion engine (ICE) or turbine generator range extenders (REV). In considering the modernization of military fleets, AxleTech's 5000 Series eISAS concept enhances performance and has the ability to provide improved stealth characteristics, lower heat signatures, and improved fuel savings to logistics vehicles, tactical vehicles, and armored personnel carriers.

"Not only is AxleTech the largest independent suspension system supplier in the defense industry, our engineering expertise, field-proven products, and lifetime service support are unmatched and make us a trusted partner to vehicle manufacturers in the military and commercial markets globally," said Bob Nichols, Senior Manager, Sales, Electric Vehicle Systems at AxleTech. "Our team is relentless in identifying ways to improve our products and technology to benefit customers. The

5000 Series eISAS is an example of this mindset – we look forward to working with customers to customize it for future applications.”

Along with offering the advantages of an independent suspension system, AxleTech’s 5000 Series eISAS concept offers a superior electric solution. Unlike standard axles, the new concept will provide maximum regenerative braking capability, which allows the energy from braking to recharge the vehicle’s batteries, and improved efficiencies. Additionally, once produced, the eISAS concept axle will utilize parallel axis gearing instead of traditional bevel gearing, thereby maintaining the axle ground clearance and allowing for maximum torque to the wheels.

While the 5000 Series eISAS concept is intended to be a highly efficient solution for future vehicles with a gross combination weight rating (GCWR) up to 58,000-pound (26.3 T) capacity, AxleTech plans to develop similar powertrain concepts for lighter load vehicles as part of its forward-thinking strategy to electrify military and commercial applications. The production of these eISAS concepts will be based on customer demand for the technology.

AxleTech has supplied independent suspension systems to the military for more than 25 years and has over 60 fielded vehicle programs for its ISAS products. With facilities located around the world, the company provides global customers with a full-purchase experience. Each independent suspension system is custom-engineered to meet a vehicle’s exacting needs and the company provides on-call service support for its products globally.

At Eurosatory 2018, which runs June 11-15, AxleTech will show an animation of the 5000 Series eISAS concept as well as other advanced military solutions, including 2000 Series ISAS®, T600 transfer case, hydraulic disc brakes, and heavy-duty gears in its booth (USA Pavilion, B648).



## Defence Industry

### Otokar debuts its Light Tank in Paris



Otokar, the leading supplier of Turkish Land Forces, debuted its TULPAR Light Tank at Eurosatory 2018 in Paris, France.

Otokar, a Koç Group company, debuted its TULPAR Light Tank for the first time at Eurosatory 2018, Europe’s largest defense industry exhibition in Paris, France between June 11th and 15th. Within its wide product range Otokar will also display its ARMA,

COBRA II, KAYA II and COBRA armored vehicles with superior mobility as well as ballistic and mine protection along with turret systems.

Otokar General Manager, Serdar GÜRĞÜZ, said, "Being Turkey's internationally recognized land platform manufacturer and operating in more than 30 countries in the world, we highly enjoy our extensive new vehicle development capabilities born by both our know-how and experience. We are more than happy to carry our experience in designing and developing armored vehicles, and particularly main battle tanks onto the new vehicles. Considering the continuously changing combat conditions and threats, light tanks, effectively serving as reconnaissance and fire support vehicles in modern armies are taking more important role in the world. By getting inspired from different requirements of our clients in different parts of the world, we combined our experience with our engineering and R&D capabilities, and debuted newly developed TULPAR Light Tank in Paris. We believe that light tanks will be more apparent in the inventories in the upcoming years."

GÜRĞÜZ stated that Otokar manufactured various armored vehicles and turret systems in different types and versions ranging from 4x4, 6x6, 8x8 wheeled armored vehicles to tracked armored vehicles, "New TULPAR Light Tank is targeting several markets. Otokar is known in the global markets as a company that designed, developed and qualified Turkey's main battle tank and our most important reference in new purchases is our armored vehicles used in more than 30 countries in five continents. We are in talks with the countries that need and demand the light tank in particular."

### "FROM EUROSATORY TO THE WORLD"

Pointing out that Eurosatory is one of the most important events of the sector, GÜRĞÜZ said: "When Otokar decided to export Turkey's first armored vehicle our first stop was also Eurosatory. The armored vehicles we exhibited in Paris in the 1990s are still being used by different armies in the world. COBRA, which has been selling as one of the most preferred armored vehicles in the world for the last two decades and ARMA, which received two important export orders in its first year of serial production were also first exhibited here.

We are happy to see that today Otokar stands apart in the defense industry, not only with its land platforms but also global know-how, engineering, R&D and technology transfer capabilities. Last year our subsidiary Al Jasoor signed a significant 8x8 armored vehicle contract for UAE Armed Forces for its RABDAN, which is displayed right beside us, in Al Jasoor stand. Our aim is to be able to respond to the needs and expectations of different users in the best possible way through similar collaborations."

### TULPAR LIGHT TANK

Otokar TULPAR Light Tank stands out with its mobility, fire power and protection. The vehicle is integrated with CMI Cockerill®'s 3105 turret with autoloader, which is capable of firing all kinds of 105 mm NATO ammunition and the Falarick Gun Launched Anti-Tank Guided Missile (GLATGM) with its high

pressure 105 mm tank gun. The Fire Control System (FCS) with fully stabilized day/night (thermal imaging) sights and coincidence firing logic provides high first-round hit probability against static or moving targets and Hunter-Killer Capability provides single and multiple target engagements. CMI Cockerill® 3105 turret has a two-man crew.

TULPAR Light Tank offers effective solution for missions requiring high fire and destructive power. Thanks to its superior mobility, TULPAR Light Tank can operate in diverse terrains where the Main Battle Tanks cannot serve due to their weight and size; like bridge capacities or in built up areas.

TULPAR is designed as a multi-purpose vehicle platform in regards to users' needs of diverse missions. The vehicle offers an ideal platform for the light tank. Tested in the toughest climate conditions and the most challenging terrains, TULPAR features a modular armor technology that can be configured and scaled according to threats as well as the best mine protection in its class. TULPAR can be integrated with active protection systems and has the capacity to accommodate 3 crew (Commander, gunner and driver) plus 2 personnel. Its outstanding Integrated Logistic Support System provides low lifecycle support costs.

Otokar also exhibited the following vehicles at Eurosatory:

### **COBRA II**

COBRA II, manufactured by Otokar with the mission of designing and manufacturing globally competitive land systems products, stands out with its superior performance. Built on the COBRA platform, COBRA II offers high level of protection and payload capacity and large internal volume. In addition to superior mobility, COBRA II also comes with the capacity to accommodate 9 personnel including the driver and commander, offering high protection against ballistic, mine and IED threats. Delivering high performance in the toughest terrain and climate conditions, COBRA II is optionally available with an amphibious version, adapting perfectly to different missions as needed. Preferred especially for offering a wide range of weapons integration and mission equipment options, COBRA II is successfully used in border protection as well as internal security and peacekeeping missions. The modular structure of COBRA II also makes it possible to be used as a personnel carrier, weapons platform, ground surveillance radar, CBRN reconnaissance vehicle, command control vehicle and ambulance.

### **ARMA 6x6**

Otokar's multi-wheeled modular armored vehicle with high tactical and technical features, ARMA 6x6 offers superior mobility, high mine and ballistic protection, as well as medium and high-caliber weapon system integration options. ARMA also comes with an optional amphibious version for peacekeeping and humanitarian aid operations in the most demanding terrain and climate conditions. ARMA 6x6 stands out especially with its high battle payload and large internal volume. ARMA can be equipped with different weapons and turret

according to the needs. The ARMA family can be used for different missions as an armored personnel carrier, armored combat vehicle, command control, CBRN reconnaissance vehicle while different weapon systems can be integrated into the vehicle.

### **COBRA**

Otokar's COBRA armored vehicle, currently used in more than 15 countries worldwide, stands out with its high mobility and survivability. Providing superior mine and ballistic protection with its monocoque body, COBRA continues to be one of the world's most recognized armored vehicle in its class. Thanks to its modular structure, COBRA can be adapted to different vehicle configurations to serve as a personnel carrier, weapons platform, CBRN reconnaissance, ground surveillance radar, surveillance, ambulance or command post depending on the mission. COBRA is also available with an amphibious version.

### **KAYA II**

KAYA II, exhibited at Eurosatory, was produced with Otokar's experience and knowhow in mine protected vehicles. Designed as a mine-resistant personnel carrier, KAYA II provides superior protection against both mines and kinetic-energy ammunition with a chassis that adapts to the terrain with a suspension system with torsion bars. Offering unparalleled mobility in all kinds of terrain and climate conditions, the 4x4 tactical wheeled armored vehicle KAYA II features a monocoque body. KAYA II has a capacity of carrying ten people including commander and driver.

## **Exhibitions**

**With the TITUS® mission orchestration, Nexter asserts its position as a global player in the digitization of the land defense**



Eurosatory, Parc des Expositions Paris-Nord Villepinte, June 12, 2018 - Nexter, a company of KNDS, asserts its position as a global land defense player in the digital world by presenting advanced digital solutions and systems on this edition of Eurosatory.

Through the TITUS® mission orchestration, the group demonstrates all its expertise to combine the best of

technology in the field of vetronics, connected vehicles (continuity of combat mounted/dismounted), onboard simulation, robotics and command systems, for greater operational efficiency.

Mastering the entire spectrum of the land sector gives Nexter the ability to identify a large part of the field of action in modern hybrid conflicts (mixed use of autonomous platforms and manned devices) and to better respond to asymmetric threats. Thanks to its integrating architect skills, the group offers operators increased operational capacities: on the ground with a Nerva® robot (IED detection, suspicious object ...), upwards with a captive drone (charging autonomy, cyber protection) and further more with an autonomous drone. The operator, equipped with a connected headset and a tablet, teleoperates weapons systems (medium-sized cupola) from inside or outside of the combat vehicle. The reported informations are available for the digitized command post, allowing faster decision-making and keeping pace with the maneuver.

With the future integration of the OPTIO® robotic system to the TITUS® mission orchestration, Nexter group will have taken a new step towards the development of hybrid operating systems in which the supervised autonomy of drones and satellite robots provides the means (sensors and effectors) of an even higher operational efficiency to the humans.



## Defence Industry

### BAE Systems team wins U.S. Marine Corps' Amphibious Combat Vehicle competition



The U.S. Marine Corps has awarded BAE Systems a \$198 million contract to deliver an initial 30 Amphibious Combat Vehicles (ACV), with options for a total of 204 vehicles which could be worth up to \$1.2 billion.

BAE Systems, along with teammate Iveco Defence Vehicles, prevailed in the Marine Corps' robust competition for the next generation of vehicles to get the Marines from ship to shore to engage in land combat operations.

"We are well positioned and ready to build the future of amphibious fighting vehicles for the Marine Corps, having already produced 16 prototypes," said Dean Medland, vice president and general manager of Combat Vehicles Amphibious and International at BAE Systems. "Through this award, we are proud to continue our partnership with the Marine Corps by providing a best-in-class vehicle to support its mission through

mobility, survivability and lethality."

The ACV provides exceptional mobility in all terrains, and blast mitigation protection for all three crew and 13 embarked Marines, along with other improvements over currently fielded systems. The new vehicle is an advanced 8x8 open ocean-capable vehicle that is equipped with a new 6-cylinder, 700HP engine, which provides a significant power increase over the Assault Amphibious Vehicle, which is currently in service and has been in operation for decades. The ACV is also adaptable to accommodate growth for future technologies or requirements.

The BAE Systems team conducted its own extensive risk mitigation testing and evaluation for land mobility, survivability, and swim capabilities that proved its vehicle's performance prior to delivering the first 16 prototypes to the Marine Corps in 2017.

Over the past 15 months, the company supported the Marine Corps' rigorous Developmental Testing and Operational Assessment of the vehicles, which performed superbly in water and land operations, payload, and survivability.

Work on the program will be performed at the company's facilities in Aiken, South Carolina; Sterling Heights, Michigan; Minneapolis; Stafford; San Jose, California; and York, Pennsylvania.

The Marine Corps' selection of BAE Systems for the ACV 1.1 program further solidifies the company's 70-year legacy of providing superior amphibious vehicle capabilities to meet ship-to-objective and combat tactical lift objectives. As a leading provider of combat vehicles, the company has produced more than 100,000 systems for customers worldwide. Iveco is also a proven manufacturer of combat vehicles, having designed and built more than 30,000 multi-purpose, protected, and armored military vehicles in service today.



## Defence Industry

### KMW and Nexter join forces on Main Ground Combat System

KMW and Nexter welcome the announcement by the French and the German governments on the joint development of a new Main Ground Combat System and a new Common Indirect Fire System. The Letter Of Intent signed yesterday is a significant step forward in the defense cooperation between the two countries and in Europe. This close cooperation was the key motivation for the foundation of KNDS in 2015, where Nexter and KMW cooperate as national system houses for land systems.

MGCS will develop a new generation of Main Battle Tanks, providing their users enhanced, innovative, and best-in-class systems with the most advanced technologies. Thus, Germany and France are jointly launching the most strategic project in European land defense for the 30 years to come, a program package that will shape the future of European armies' main combat capabilities and contribute to Europe's sovereignty and strategic autonomy.

The skills and background of KMW and Nexter qualify both companies as suitable and particularly powerful and pivotal industrial partners for the Franco-German landsystem-program

MGCS. Thus, in close cooperation with leading technology companies, KMW and Nexter will substantially contribute to a strengthened European defense capability.

The agreement of both nations to capitalize on the success of the German and French MBT programs and to base the industrial leadership for the MGCS program in Germany demonstrates the strong commitment towards a unique European cooperation in land systems. Beyond that, it strengthens Europe's excellence in providing leading edge land- systems- technologies for the years to come.

### Defence Industry

#### Supacat delivers the first production HMT Extenda Vehicle to Norway



UK Special Forces vehicle designer and manufacturer, Supacat (part of SC Group), has today announced the recent delivery of the first production HMT Extenda vehicle to the Norwegian Armed Forces. The handover took place at Supacat's Devon facility on 30 May 2018.

Supacat signed a J23 million contract with The Norwegian Defence Material Agency (NDMA) to supply a new fleet of High Mobility Vehicles in May 2015. The award includes the provision of a comprehensive through-life support package. The first 'pre-series' vehicle was delivered in early 2017 followed by full fleet delivery taking place during 2018 and 2019.

The HMT Extenda is unique as it is convertible to a 4x4 or a 6x6 configuration by inserting or removing a self-contained third axle unit to meet different operational requirements. Like other HMT series platforms, such as the UK's 'Jackal', the HMT Extenda can be supplied with optional mine blast and ballistic protection kits and with a variety of mission hampers, weapons, communications, ISTAR and force protection equipment to suit a wide range of operational roles.

Major Arild Stangenes, NDMA Programme Manager said "the delivery of our first production vehicle is a major milestone in a long-term programme that has been ongoing since 2011. We are very pleased with the quality of our first production vehicle and with a product that fully meets the needs of our user."

Nick Ames, Chief Executive of SC Group, of which Supacat is a part, said "this project milestone is a great achievement for Supacat and for our Norwegian customer. I am proud of what the team has achieved in delivering a fantastic product and we are looking forward

to following this first production delivery with the rest of the order." He added, "yet again, the Supacat HMT has proven itself to be the vehicle of choice for specialist users across the globe."

### Robots

#### HORIBA MIRA Displays Centaur Unmanned Ground Vehicle at International Defense



HORIBA MIRA – a world-leader in unmanned ground vehicle systems has displayed its state-of-the-art unmanned ground vehicle (UGV) platform, CENTAUR, at Eurosatory in Paris, France.

The UGV can be integrated with various payloads including the detection of improvised explosive devices, remote surveillance and soldier support.

The CENTAUR platform is a variant of the VIKING platform that HORIBA MIRA has developed over a number of years. The lightweight vehicle can reach speeds of up to 40kph.

Eurosatory is the international leading exhibition of land and air defence and security, held between 11-15 June. This year it will host more than 1,750 exhibitors from 63 countries, and more than 57,000 professional visitors are expected.

The vehicle will be displayed at the stand of Katmerciler, the Turkish defence company, with whom HORIBA MIRA formed a consortium for UGV development last month.

Rob Mohacsi, Senior Commercial Manager, Defence Systems said, "HORIBA MIRA is viewed as a pioneer in high-tech autonomous vehicles and we are delighted to bring our platform to such a prestigious event. We pride ourselves on being at the cutting edge of developments in the defence and security industries and, as such, there is no better place at which to showcase the work of our world-class engineers."

### Defence Industry

#### General Dynamics Ordnance and Tactical Systems Awarded Contract for U.S. Army's Ground Mobility Vehicle Program

ST. PETERSBURG, Fla. -- General Dynamics Ordnance and Tactical Systems was awarded a \$33.8 million contract on May 22, 2018, by the U.S. Army Contracting Command, Warren, Mich., for the production of Army Ground Mobility Vehicles (AGMV) and associated kits.

Based on the GMV1.1 vehicle the company is currently delivering to the U.S. Department of Defense, the AGMV configuration carries an airborne infantry squad with a payload capability of over 5,000 pounds. It shares approximately 90 percent parts commonality with the GMV1.1 and meets the same strategic lift requirements. The AGMV's open design provides the ability to readily modify the vehicle to accept already developed kit configurations such as remote and manned turrets, armor and arctic kits.



“The AGMV brings the right capability and performance to the Army for their immediate need and future requirements due to its highly reliable, adaptable and versatile design,” said Steve Elgin, vice president and general manager of armament and platform systems for General Dynamics Ordnance and Tactical Systems. “By leveraging the GMV1.1 program, the Army can take advantage of the engineering, development and testing that has already been completed by Department of Defense. This significant time savings, along with the proven performance of the deployed GMV1.1 vehicles, gives the Army the ability to get this urgently needed capability into the warfighter’s hands now.”

Estimated completion of this contract is March 2019.

The GMV1.1 (M1288) and AGMV (M1297) are part of a family of vehicles developed by General Dynamics and Flyer Defense. The family includes the Flyer60 ITV, the Flyer72 Light Reconnaissance Vehicle (LRV) and the newest variant the Flyer72 Tactical Utility Vehicle (TUV).

The Stryker A1 builds upon the combat-proven Double-V Hull (DVH) configuration, providing unprecedented survivability against mines and improvised explosive devices. In addition to the DVH survivability, the Stryker A1 provides a 450-horsepower engine, 60,000-pound suspension, 910-amp alternator and in-vehicle network. The Stryker A1 Infantry Carrier Vehicle is one of the most versatile, most mobile and safest personnel carriers in the entire Army inventory.

Work will be performed in Lima, Ohio; Anniston, Ala.; Tallahassee, Fla.; and Sterling Heights; with an estimated completion date of March 2020.

Land Systems is a business unit of General Dynamics (NYSE: GD). General Dynamics Land Systems provides innovative design, engineering, technology, production and full life-cycle support for land combat vehicles around the globe. The company’s extensive experience, customer-first focus and seasoned supply chain network provide unmatched capabilities to the U.S. military and its allies.

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## Defence Industry

### General Dynamics Receives Contract to Upgrade U.S. Army Strykers to A1 Configuration



STERLING HEIGHTS, Mich. -- The U.S. Army has awarded General Dynamics Land Systems a \$258 million contract modification to upgrade 116 Stryker flat-bottom vehicles to the Stryker A1 configuration.