Army Guide monthly

3 (162) March 2018

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Defence Industry

BAE Systems submits proposal for the U.S. Army's Mobile Protected Firepower program

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BAE Systems has submitted its proposal to the U.S. Army to build and test the Mobile Protected Firepower (MPF) vehicle for use by the Infantry Brigade Combat Team (IBCT).

The MPF is a new combat vehicle required by the Army to provide the IBCT with a protected platform capable of delivering overwhelming precision firepower combined with the ability to move rapidly in a variety of terrain conditions.

"Our MPF vehicle is the result of more than 30 years of research and development to build a rapidly deployable, light combat vehicle designed specifically to support the light infantry," said Jim Miller, director of Business Development at BAE Systems' Combat Vehicles business. "Our offering integrates the most modern technologies into a non-developmental design based on development, testing, and lessons learned from our portfolio of combat vehicle programs."

BAE Systems leveraged the Army's earlier investment in, and made improvements on, the type-classified M8 Armored Gun System — as well as other previous programs — into a fully integrated MPF system. By adding modern technology, BAE Systems developed a low-risk solution that has both a mature design and the latest in innovation. It provides a highly survivable, lethal, mobile, and transportable vehicle system to the IBCT.

"Our solution is built around the IBCT's needs and the evolving threats they face," Miller said. "It is as deployable as the IBCT's other equipment and is easily sustained and maintained with assets already organic to the IBCT. Our infantry fights in close terrain, urban areas, and remote locations, so a smaller, lightweight vehicle that still provides superior protection and lethality was essential to the design of our MPF offering."

BAE Systems has developed and built a vehicle that is currently going through internal testing. The company will submit the vehicle to the Army on April 2 to undergo additional U.S. government testing as a part of the bid assessment process.

Defence Industry

Kazakhstan Paramount Engineering's 8x8 combat vehicle nearing service entry

Paramount Group, the African-based global defence and aerospace company, and its joint venture in Kazakhstan, Kazakhstan Paramount Engineering (KPE), announced that the Ministry of Defence of Kazakhstan is in the final stages of the evaluation of the Barys 8x8 combat vehicle ahead of acceptance into service by the country's armed forces.

The Barys (Snow Leopard in the Kazakh language) which is based on Paramount Group's Mbombe 8 represents the pinnacle of land system technologies and was developed to meet the increasing demand for multi-role, high mobility and mine-hardened platforms.

The winter trials included day and night firing and the Barys 8x8 vehicle was equipped with a Shipunov 2A42 30 mm automatic cannon and a 7.62mm machine gun jointly manufactured by Kazakhstan's 'KAE', which manufactures electro-optic defence equipment and Turkish defence company, Aselsan.

Winter trials of Barys 8 started during early December 2017 with a series of intensive factory acceptance tests to finally evaluate and optimise the complete weapon system, platform and turret. The trails were conducted at a Military tank test polygon in central Kazakhstan.

Johan Delport, Director of the KPE factory in Astana, said: "The most severe winter conditions prevailed during testing, similar to conditions found in Siberia. During this period the temperature dropped to -45 Celsius with a chill factor of minus 60 Celsius, resulting in serious challenges to man and machine while conquering up to 750mm of soft snow.

"During such conditions every smallest detail and subsystem could be evaluated extensively. Items such as glass heating for de-ice and de-misting, engine heating before starting, batteries, cabin heating, electrical functions, steering, and suspension have been successfully tested. The vehicle performed exceptionally throughout the trials."

The design of this vehicle allows for the fitment of a very large array of weapon systems. This enables the vehicle to be customised for armed forces all around the world.

The weapon system has been evaluated during both day and night firing sessions, static as well as firing on the move using the stabilisation mode. The 30mm canon which has ranges beyond 2000 meters has been demonstrated successfully under the severe ambient

conditions.

The 8x8 combat vehicle and other Paramount armoured vehicles will be produced at the 15 000m2 KPE armoured vehicle factory in Astana – the largest armoured vehicle factory in Central Asia and the first defence manufacturing plant with this scale of capability in Kazakhstan. It has a capacity of more than 200 vehicles per year for the production of the full range of Paramount's armoured vehicles with bespoke modifications for local conditions.

Ivor Ichikowitz, Founder and Executive Chairman of Paramount Group said: "Building our combat vehicles through local partnerships in Kazakhstan shows that we can produce highly advanced technologies anywhere in the world. One of the most significant trends in today's defence industry is the increasing requirement of sovereign nations to develop their own defence equipment.

"Building defence industrial eco systems, inside our customer countries, through strategic alliances have been the cornerstone of our industrial philosophy. Our partnerships have driven innovation, technology transfer, local manufacturing, skills development and jobs around the world."

The Barys 8 is the winterised version of Paramount's Mbombe 8 that employs an innovative new form of construction to give unprecedented levels of protection, while keeping profile to a minimum. The 8x8 also draws on the company's experience of designing the highly advanced Mbombe family of armoured vehicles.

The Mbombe family of 4x4, 6x6 and 8x8 vehicles share over 80% of common components to reduce through life costs. This commonality offers significant cost benefits to armed forces due to greater efficiencies and significant savings in maintenance and logistical support.

In addition to the Barys, KPE has been ramping up production and deliveries of the Arlan (the localised version of Paramount Group's Marauder APC) to the armed forces in Kazakhstan. In November 2017 Paramount Group delivered more Arlan armoured vehicles to Kazakhstan's Special Forces. The latest delivery of the Arlan will see the vehicles in operation with the Ministry of Defence, Special Forces and other law enforcement agencies.

Key features of the Mbombe 8/Barys 8 include:

- Gross weight of 28 tonnes and kerb weight of 19 tonnes
- Payload of 9 tonnes which covers weapon system, ammunition, crew and supplies
- Powered by a 6 cylinder engine turbo charged diesel engine
- Six speed automatic transmission
- Max speed of 110km/h
- Operating range: 800 km
- High levels of ballistic and mine protection: ballistic protection: STANAG 4569 Level 3+ and blast protection: STANAG 4569 Level 4a and 4b
- Wide range of turrets and weapon stations can be integrated
- The cooling systems and driveline have been tested and proven in winter conditions of -55 Celsius and desert conditions of +55 Celsius
- Large internal volume due to position of powerpack

Huge potential for KONGSBERG in Qatar

KONGSBERG has signed a cooperation agreement in Qatar for long-term technology development programs within defence, maritime industry and digitalization.

The first programme in relation to the cooperation will be delivery of communication, digitalization and tower solutions for military vehicles, a programme with a potential of approximately NOK 15 billion over the next eight years.

The programme will be the largest in KONGSBERG's history and entail 15.000 Norwegian man-labour years and involve more than 170 Norwegian sub-suppliers.

Together with Barzan Holdings, KONGSBERG has established a new company for technology development programs. The company, BK Systems, will have its main office in Qatar Science & Technology Park, and KONGSBERG holding the CEO position. The park is an innovation hub for leading international industry and universities.

- BK Systems will be an important company for the development of technology and solutions within defence, digitalization and maritime industry in Qatar. The establishment of this cooperation shows that Norwegian high-tech industry is world-leading and in demand. We see considerable opportunities and potential for Norwegian industry and technology development with this establishment, says Geir Hешу, President and CEO of KONGSBERG.

Today, Barzan Holdings announced the companies that have been selected to deliver to the country's upcoming vehicle programme which is to be delivered over the next eight years.

KONGSBERG is to deliver tower solutions, and digitalization and communication solutions to 490 armoured vehicles delivered by the French company Nexter. The next steps in the process will be detailing and final negotiations prior to signing the final contract for the programme.

- The vehicle program will be KONGSBERG's single largest contract ever and entails considerable Norwegian value creation and high-tech jobs for many years to come. The potential is approximately

15 billion kroner for KONGSBERG. Approximately 15.000 Norwegian man-labour years and more than 170 small and medium sized sub-suppliers will be involved in the programme over the next eight years, says Нешу.

KONGSBERG is to deliver the solutions "PROTECTOR Remote Weapon Station" and "Medium Caliber Turret" to the programme, both tower solutions developed for increased protection of personnel.

The PROTECTOR Remote Weapon Station is a system that was developed in cooperation with Norwegian armed forces towards the end of the 1990s, and has since been continuously developed and is now the world-leading solution with close to 20.000 systems delivered to 19 nations.

The Medium Caliber Turret is a further developed, larger sized solution currently under delivery to the US armed forces. In addition to the delivery of the tower solutions, the agreement also includes delivery of integrated digitalization and communication solutions for the vehicles.

- Together with other Norwegian high-tech industry, KONGSBERG has for decades built up world-leading competence on system integration, decision support tools and digitalization solutions which are to be delivered to this vehicle program. Today we are the world-leading supplier of these systems and we are pleased that the Qatari authorities have chosen our solutions, technology and competence, says Нешу.

Defence Industry

Rheinmetall set to supply the Australian Defence Force with over 200 Boxer wheeled armoured reconnaissance vehicles

The Prime Minister of Australia, The Honourable Malcolm Turnbull MP, has announced today that Rheinmetall has been selected by the Australian Government to provide its next generation 8x8 Combat Reconnaissance Vehicles (CRVs) as part of plans to modernise the Australian Army under the Land 400 Phase 2 Project.

The multi-billion dollar project will see Rheinmetall deliver at least 211 of the latest generation Boxer 8x8 vehicles, with Rheinmetall's advanced Lance 30mm turret fitted to the reconnaissance variants. To deliver the project Rheinmetall will establish a state of the art Military Vehicle Centre of Excellence (MILVEHCOE) near Brisbane in partnership with the Queensland State Government. The MILVEHCOE will serve as the focal point for the execution of the program and a base for the establishment of an export orientated military vehicle industrial complex in Australia. The MILVEHCOE will support the Australian Governments Defence Export Strategy that was recently announced by the Australian Minister of Defence Industry, The Honourable Christopher Pyne MP.

Armin Papperger, CEO of Rheinmetall AG commented, "It is a privilege for Rheinmetall to have been selected by the Australian Government to deliver this landmark military vehicle program. The program, one of the largest in the history of Rheinmetall, will continue our successful partnership with the Australian Government that has been delivering the latest generation of military trucks to the Army."

The Boxer 8x8 provides an unparalleled level of capability in a highly mobile, survivable, adaptable vehicle that will see Australia join leading nations already using the vehicle including Germany, The Netherlands and Lithuania. The Lance turret fitted to the vehicle utilises the latest technologies that allow the Boxer CRV to be uniquely aware of its environment, with advanced systems to automatically detect, characterise and track threats on the battlefield. The turret features a range of scalable effects, including non-lethal systems, the latest air-burst cannon technologies and a guided anti-tank missile system that allows the crew to engage the most aggressive threats on the battlefield.

Ben Hudson, global head of Rheinmetall's Vehicle Systems Division, said, "We are honoured to have been chosen by the Australian Government at the conclusion of the rigorous Land 400 Phase 2 selection process. I must pay tribute to the Rheinmetall team and our Australian partners that have contributed to Land 400; their tireless dedication over the last three years will ensure that the Australian Army receives a vehicle that allows them to fight, survive and win on the battlefields of today and tomorrow."

The MILVEHCOE will allow Rheinmetall to transfer cutting edge technologies to Australia in the areas of military vehicle design, production, turret systems, sensors, survivability, simulation and through life support. This transfer of technology, coupled with the scale of the Land 400 based Australian design and manufacturing, will underpin the establishment of an export oriented military vehicle industry that will collaborate with academic institutions in companion technologies and see significant development in small to medium businesses around Australia that cooperate with Rheinmetall through the MILVEHCOE.

After two years of extensive industry engagement, Rheinmetall has identified over 40 companies from around Australia that will form part of a globally competitive military vehicle industry. Some of the businesses that will contribute to the truly national Rheinmetall Boxer CRV program include:

- MILSPEC and Bisalloy from New South Wales,
- Supashock from South Australia,
- Nioa and Penske from Queensland,
- Direct Edge from Tasmania,

- Supacat, Tectonica and Cablex from Victoria, and
- Hoffman Engineering from Western Australia.

Gary Stewart, Managing Director of Rheinmetall Defence Australia, said "The Land 400 program will enable the Australian Army to receive the best CRV capability for their needs, and create a long term, economic benefit for Australia. Rheinmetall's investment in the MILVEHCOE will enrich the economy in the high technology advanced manufacturing sector and broaden employment in defence across the nation. In doing so, we will create a strong sovereign military vehicle industry that allows Australian companies to innovate, compete and win globally."

Defence Industry

Three-axis amphibious armored truck was created in Belarus

Multi-purpose armored vehicle Vitim 668240 was developed in Minsk at the Minotor-Service enterprise. It was first presented at the International Military Technical Forum "Army-2017" in the Moscow region of Kubinka, Russia.

From many similar products the Belarusian vehicle differs by the wheel formula 6x6 and the ability to swim across water obstacles. The armored vehicle can swim at a speed of 5 km/h. A 215-horsepower turbo charged diesel can accelerates thid eleven-ton vehicle up to 110 km/h.

In addition to the transportation of personnel, it is possible to transport various cargoes with a total weight of up to 3.5 tons.

If necessary, different armament can be integrated in the body of an armored truck: a 23-mm ZU-23-2 anti-aircraft gun, 82-mm 2B9M Vasilek mortar, a 73-mm anti-tank grenade launcher SPG-9, heavy machine guns, ATGM complexes, light anti-aircraft guns, rocket systems.

In addition to combat use, it can be used for rear-end needs: it provides for the installation of lifting equipment, fuel tanks, etc.

Armored protection Vitim can withstand bullets of caliber 7.62 mm Kalashnikov assault rifle and detonation under the bottom of F-1 hand grenades.

The armored vehicle aroused considerable interest of military specialists.

Robots

In Russia conducted winter tests of Combat UGV

On March 6, 2018, the Kalashnikov Concern published information on recent tests of equipment and weapons, the purpose of which was to test the operation of all systems in low-temperature conditions. The company published a brief description of this event, as well as shared photos and videos. The press service of the concern explained what exactly specialists were doing during the recent tests and what tasks they were solving.

Specialists of the concern "Kalashnikov" in one of the polygons near Moscow tested several products intended for the army and law enforcement agencies, such as:

- a new Group 99 multi-layer military clothing set
- different types of equipment for fighters
- PPDU remotely controlled portable platform
- Tourist buggy
- perspective motorcycles
- Soratnik and Nahlebnik Combat Unmanned Ground Vehicles (CUGV)

CUGV have demonstrated that it can move through the snow and work in low temperatures conditions. They also demonstrated the possibility of interacting with human in the common combat missions.

While assaulting on a building with a conventional adversary, one of these vehicles used weapons, after that another system used a machine gun.

Soratnik

The project of the Soratnik CUGV was developed several years ago, and the first demonstration of the

prototype took place on the "Army-2016" military-technical forum. The project provides for the creation of a self-propelled medium sized tracked platform, suitable for mounting a variety of weapons or special systems. The project was developed by the Kalashnikov Concern in accordance with the requirements of the Ministry of Defense of Russia.

The base of the Soratnik is a multi-purpose tracked chassis. This vehicle equipped with light armor and has an internal combustion engine with a mechanical transmission. The tracked chassis is used with five small-diameter road wheels on each side. Wheels have an independent torsion bars, some of them also use shock absorbers.

Soratnik has several video cameras. In the latest versions of the project, large armored components were replaced by units of reduced dimensions. The signal from the video cameras is transmitted by radio to the operator's console. Back for the two-way channel commands are received for the powerpack and transmission, as well as for special equipment.

On the roof of the CUGV body there is a place fot integration another equipment. First of all, Soratnik is considered as a carrier of light infantry weapons, suitable for the destruction of manpower, unarmored equipment and unprotected buildings.

This time the CUGV has a new turret. A special feature of the new weapon station was the use of an additional shield. In front of the main body of the weapon station, designed for mounting optical-electronic means, an armored shield of complex shape is installed, providing protection from attacks from the front and from the side. The machine gun and the sensor unit, are located above the upper cut of the frontal sheet.

On the left of the weapon station is a protected unit with optoelectronic equipment. At the disposal of the operator there is a video camera, a thermal imager and a laser rangefinder, interacting with the fire control system.

For testing, Soratnik CUGV received a set of weapons, which allows to solve different combat tasks. On the weapon station, a PKTM machine gun and an automatic grenade launcher AG-17A were mounted. With the help of such weapons, the system is able to deal with different goals that do not have powerful protection.

Soratnik, depending on the configuration, can have a combat weight of up to 7 tons. The powerpack allows it to has on the highway maximum speed up to 40 km/h. The road range of the vehicle is 10 km. In this case, the terrain on which the complex operates should not interfere with the transmission of radio signals to the operator's console and to the CUGV.

In time of any missions Soratnik can work independently or together with humans. So, during the winter tests the CUGV supported the assaulting of the building. It protected the fighters by armored hull, and also used weapon. Thus, it can perform the functions of a scout, an assault vehicle or an escort and support for infantry.

Nahlebnik

The Nahlebnik robotic complex is another variant of a CUGV capable of solving a variety of tasks in different conditions. The main difference of this vehicle from the Soratnik is the reduced size and weight. Due to this, the new complex can be used as a supplement to a larger vehicle. The combined use of two CUGVs with different characteristics may give certain advantages.

The Nahlebnik project started several years ago. In February 2017, the Kalashnikov Concern for the first time demonstrated a prototype of this CUGV. The prototype was demonstrated along with the weapon station with a multi-barreled machine gun. Subsequently, the project was finalized, and now experienced automated systems can carry other weapons.

In May 2017, the management of the Kalashnikov Concern turned out that this project was designed as an experiment and was intended for testing various technical solutions. The main purpose of the work was to study new variants of layout of small-sized equipment with the most dense placement of units. The experiment ended with luck and allowed to collect the necessary data.

The basis of Nahlebnik CUGV, as in the case of Soratnik, is a multi-purpose tracked platform. Control is carried out with the help of an operator's console with the transmission of video signals and commands on a two-way protected radio channel.

Nahlebnik is equipped with an internal combustion engine, and also differs from the Soratnik design of the undercarriage. This time there are only four road wheels on each side of the hull. Suspension - independent, based on the balances and springs. In the undercarriage, the front idler, standardized with the road wheels, and the rear drive sprocket are provided.

Initially, the Nahlebnik CUGV was demonstrated with a remotely controlled weapon station equipped with a GSH-7,62 four-barrel machine gun. On the left side of the RWS was an optoelectronic unit, on the right - a

amunition box. During the recent tests, the CUGV had an altered configuration. On the roof of the RWS, there are 4 ATGMs.

Unlike the larger Soratnik, the relatively compact Nahlebnik, as follows from the published materials, worked on the ground only on its own. The joint work of the CUGV and humans was not worked out.

Soratnik and Nahlebnik CUGVs, developed by the Kalashnikov Concern, were presented to the general public in 2016 and 2017. Over the past time, in parallel with the improvement of projects, various tests were carried out.

Works on new models of technology are continuing, and, possibly, in the future, CUGV s will reach the point of acceptance for operation in the army. It is curious that the company-developer plans to create other models of combat robotic systems. Last spring it was announced that on the basis of existing vehicle, a CUGV project with a mass of about 20 tons is being created. The current successes of such a project of special interest have not yet been announced. Perhaps the first information about its real results will appear in the very near future.

CUGV s with weapon or another equipment are not just an actual trend in the field of military equipment. Such systems have a number of characteristic advantages and are of great interest to the armed forces. To date, the Russian defense industry has created a number of samples of this kind, and the development process continues.