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Contracts

U.S. Army Places $484 Million Order For 1,574 oint Light Tactical Vehicles

OSHKOSH, Wis. -- Oshkosh Defense, LLC, an Oshkosh Corporation (NYSE: OSK) company, announced today that the U.S. Army has placed a $484 million order for 1,574 Joint Light Tactical Vehicles (JLTV) and associated installed and packaged kits.

"This latest order follows the completion of the Multiservice Operational Test and Evaluation (MOT&E) conducted by the U.S. Army and Marine Corps and further demonstrates that the JLTV program continues to be a top modernization priority for our armed services," said George Mansfield, Vice President and General Manager of Joint Programs at Oshkosh Defense. "The JLTV is ready to support our troops, and we look forward to getting more soldiers and Marines into this extremely mobile, protected, and proven next-generation light tactical vehicle."

In addition to the recently completed operational testing, the JLTV also completed Reliability Qualification Testing earlier this year, accumulating over 100,000 miles and exceeding reliability requirements.

To date, Oshkosh has produced more than 2,000 JLTVs and has delivered more than 1,600 JLTVs to the U.S. Army and Marine Corps. A Full Rate Production (FRP) decision is expected in FY19.

Robots

The Nerehta Combat Unmanned Ground Vehicle is ready to be adopted by the Russian army

Multifunctional Nerekhta CUGV (Combat Unmanned Ground Vehicle) has completed a full range of tests and is ready to be adopted by the Russian army. The family of Nerekhta CUGV can greatly enhance the combat capabilities of military units and reduce personnel losses.

The unique CUGV can perform the functions of transporter, support, reconnaissance vehicle, anti-EOD robot, combat platform and so on. The uniqueness of Nerekhta is in the combination of an electric motor and a classic internal combustion engine, as well as equipping the front and rear cameras with infrared illumination.

This CUGV can accommodate up to five fighters. Vehicle is fully protected by armor. The body is protected by the 5th class, as an Infantry Fighting Vehicle or an Armored Personnel Carrier, and can protect against small-arms bullets and grenade spalls.

With a weight of one and a half tons, the robot is able to reach speeds of up to 32 km/h and overcome any terrain, including snow drifts, swamps, sand and forest. A small robot has less signature than conventional armored vehicle.

Within the framework of the state tests, Nerekhta successfully completed all types of live firing. Representatives of the Russian Defense Ministry highly appreciated the combat platform, which is ready for operating by the Russian army.

Future Technologies

Bradley Driving... In Stereo

A U.S. Army TARDEC engineer explains the operation of the forward-facing camera package that enables depth perception during closed-hatch driving. TARDEC, with Honeywell Aerospace and DARPA, are demonstrating a proof-of-concept for closed-hatch driving using high-resolution stereo vision at Detroit Arsenal in Warren, Michigan, June 12, 2018.

Helmet-mounted stereo vision sounds like a solution for fighter jets, but Department of Defense engineers and industry experts are rooting this technology on the ground.

The U.S. Army Research, Development and Engineering Command's center for ground vehicle systems, TARDEC, working with Honeywell Aerospace, installed a prototype helmet-mounted stereo vision system previously developed under the Defense Advanced Research Projects Agency (DARPA) Ground X-Vehicle Technologies (GXV-T) program into a Bradley Fighting Vehicle this past week.

The Army's Tank Automotive Research, Development and Engineering Center's engineers regularly seek solutions for effective "closed-hatch" operations. That is, driving an armored vehicle with the top hatches closed in

order to provide better protection for the crew. In its current configuration, the Bradley can only be driven closed-hatch with the driver peering through mirrored sights with a limited field of view.

Taking on the task is TARDEC's Mission Enabling Technologies-Demonstrator (MET-D) team, engineers who install forward-leaning technologies like high-resolution 360 situational awareness sensors, cutting-edge communications, unmanned aerial vehicles and more onto modified vehicle platforms. The team then operates these demonstration platforms in a variety of conditions and simulated operations to gauge how well the technology enhances Soldier mission effectiveness.

The MET-D team pursued adding the Honeywell Aerospace technology, developed for the GXV-T program, to an existing suite of 360-degree situational awareness sensors to complete the driving experience. The system includes an array of forward facing stereo camera pairs whose imagery is projected into the left and right eye of the user through a pair of holographic optical elements allowing them to perceive depth while showing a wide field of regard without causing nausea or eye strain.

"This is an incremental step in simulating direct sight conditions," says Troy Tava, TARDEC's project manager for MET-D. "It may possibly be the 'x-factor' for fully operational closed hatch driving."

Robots

France-based SD4E introduced the sniper robot

Developed on an unmanned ground vehicle, the robot, called Snibot, can shoot with high precision to its targets.

According to the SD4E statement, Snibot, capable of shooting with precision that can not be reached by people from 200 and 300 meters away, can also be inactivate its targets without killing. The system measures with its sensors, weather, wind, target mobility and other variables, sensors and day and night vision optics, and computes by using the algorithm it has for the shot accuracy. Snibot, the target can fire at the desired organs.

Defence Industry

The Indonesian PT Pindad medium tank tested by mine explosion

On July 12, 2018, the Indonesian company PT Pindad jointly with the Turkish company FNSS conducted a mine explosion test of the prototype of the medium tank.

The tests were carried out by placing explosives equivalent to TNT 10 kg under the track. The goal is to find out to what extent the strength of the tank design will provide anti-mine protection. After the detonation, only the wheels and track were damaged. While the tank hull has not undergone any appreciable deformations.

"You can see with the naked eye that it passed the test. The purpose of this test is to make sure that the structure of the combat vehicle is not damaged," said PT Pindad Technology and Development Director Ade Bagja. "The components knocked out by the explosion can be repaired, for example, broken tracks and damaged support wheels," he added.

Ade said that the middle tank is the result of the joint design of PT Pindad and FNSS. Tests will be continued to determine the level of injuries to the driver and crew after the explosion.

"We want to make sure that the passengers are safe. Inside the tank, we place a dummy with various sensors to see if there is a death injury from the explosion or not. Fatal or not, there were injuries, we can see in the next few days," he explained.

"The second explosion tests with 8 kilograms of TNT under the hull bottom will be held next Saturday," he also said.

PT Pindad CEO Abraham Mose said he was satisfied with the results of the explosion tests conducted. "The results are very encouraging, because these tanks have been improved after the first and second tests by an explosion in Turkey," he said.

The same was noted by the Director for Defense Procurement of the Ministry of Defense of Indonesia, Bondan Tiara. He hopes that medium tanks will soon be serially produced jointly by PT Pindad and the Turkish FNSS. "We are happy, the result is very good. We hope that the next test can take place with even better results, "he said.

The medium tank Pindad has a combat weight of 32 tons, engine power is 711 hp. It has automatic transmission, a maximum speed of 70 km/h. It can accommodate 3 crew members, consisting of commanders, gunner and driver, and has a turret with a main gun of the caliber 105 mm, which provides great firepower.

Contracts

DALO Contracts Systematic To Enhance Artillery System Combat Effectiveness

Systematic has been contracted by the Danish Defence Acquisition and Logistics Organisation (DALO) to deliver a new fire support capability for the Danish Army's latest artillery systems.

The new function builds on the Fire Support Module developed for Systematic's SitaWare Headquarters solution and will significantly shorten the sensor-to-shooter engagement cycle, among other benefits.

"The threat posed by counter-battery fire on the modern battlefield necessitates the ability for artillery systems to 'shoot-and-scoot' while maintaining accurate targeting," explained Hans Jшrgen Bohlbro, Systematic's Vice President, Defence Product Management, "One of the benefits of the new function is the ability for artillery systems to quickly conduct fire missions and redeploy before they can be engaged by enemy fires".

The new capability enables fire mission data – first generated by a forward observer and passed to the gun crew via a joint fires cell or similar element – to be digitally transferred into an artillery fire-control system (FCS), where the ballistic calculations are made.

Although the process will do away with a man-in-the-loop for entering the fire support data into the FCS, there will always be operator verification before the mission is carried out.

"One of the benefits of the new function is the ability for artillery systems to quickly conduct fire missions and redeploy before they can be engaged by enemy fires" - Hans Jшrgen Bohlbro, Systematic's Vice President, Defence Product Management.

The Danish Army is rolling out the SitaWare suite of software across all levels of the battlefield, in the artillery fire support scenario the forward observer and gun crews will be equipped with SitaWare Frontline, while the fires coordination component utilises SitaWare Headquarters.

Under the contract, Systematic is scheduled to deliver a fieldable solution in the 2020 timeframe, with integration and firing trials taking place in 2019. Ultimately, the new capability will be deployed on the Danish Army's new Caesar self-propelled howitzers and Cardom 10 mortars, which will be integrated on Piranha V armoured vehicles.

Contracts

Iveco-Oto Melara Consortium (CIO) Signs Contract With The Italian Ministry Of Defence For 10 Centauro II Armoured Vehicles

The Iveco-Oto Melara Consortium (CIO), which is 50% owned by Leonardo, signed a contract worth 159 million Euros with the Italian Ministry of Defence for the acquisition of the first 10 new Centauro II armored vehicles. The signing ceremony took place at Palazzo Guidoni, the headquarters of the Italian Secretariat General of Defence and of the National Armaments Directorate. It was attended by the Secretary General of Defence and National Armaments Director, Aerial Squadron Marshall Carlo Magrassi, the Italian Army Chief of Staff, General Salvatore Farina, and the Director of the Land Armaments, Lieutenant General Francesco Castrataro.

This is the first tranche out of a total 136 units. The contract also includes spares and logistic support.

The contract value for Leonardo amounts to approximately 92 million Euros. The company will be responsible for the development and integration of the complete turret defense system, including the observation, targeting and communications systems.

Centauro II is a major step forward compared to the Centauro I in terms of power, situational awareness, mobility, ergonomics, shooting behavior and communications, all while providing maximum crew protection. It is a latest-generation wheeled armored vehicle that can operate in any number of scenarios: from national security missions to peacekeeping and support operations and in other operational theaters in which the Armed Forces need to intervene.

Defence Industry

Leonardo DRS Battle Management Hardware Successfully Supports Australian Tanks During Combat Exercise

ARLINGTON, VA -- Leonardo DRS, Inc. announced today that its next-generation ruggedized battle management hardware successfully supported Australian Armored Cavalry Regiment M1A1SA tanks during the recent Exercise Hamel. The

hardware provides the Army's armored cavalry units improved connectivity within the Australian Defence Force as well as increased U.S., Joint, and Coalition battle management system interoperability in the field.

The system was featured for the first time in an operational exercise and successfully connected the main battle tanks to the Army's battle management network. Prior to integrating the battle management hardware, the tanks had not been able to communicate on this mission-critical network.

"In close cooperation with the Australian Army, together we have provided a combat-proven system that gives commanders, leaders, and Soldiers improved situational awareness and is a mission-critical tool to ensure success on the battlefield," said Jerry Hathaway, vice president and general manager of DRS Land Electronics business. "DRS is grateful for the collaborative relationship with the Commonwealth of Australia in support of the highly successful Exercise HAMEL. DRS looks forward to leveraging our recent $841M US Army battle management system hardware award into integrated, scalable solutions for emerging Commonwealth of Australia needs". "These ultra-rugged computers are part of a long line of combat-proven hardware, for a wide range of platforms, we have provided our allies in the Australian Army," Hathaway said.

The Army is demonstrating the Leonardo DRS battle management hardware in this environment with the goal of showing that it is able to be used continuously in a complex, maneuver-intensive operational environment.

The system gives users the capability to support, not only systems like Blue Force Tracking, but will also be able to run all Australian Army battle management system applications, integrate all required Line of Sight and Beyond Line of Sight communications, and integrate cameras and other sensors all in one computer. The rugged dismountable and out of the hatch BMS tablet capability was used by tank platoon leaders, 2nd In Commands, and Troop Commanders on their tanks to conduct mission planning and digital rehearsals within the unit and present their plans to attached units. The DRS equipment fulfills the Australian Army mission requirements today and is fundamental to providing future capabilities like the Health and Usage Management System, Weapons System Integration, sensor integration, and future upgrades to the network architecture.

Robots

HORIBA MIRA to Continue to Develop Cutting Edge Unmanned Ground Vehicle Technologies

HORIBA MIRA – a world leader in unmanned and autonomous systems design, has been awarded a J700,000 cross-government collaborative programme contract for the second phase of the Autonomous Last Mile Resupply (ALMRS).

Through the Defence and Security Accelerator (DASA), the UK Ministry of Defence (MOD) together with the Department for International Development (DFID) and UK Research and Innovation (UKRI) are working together to deliver advanced designs for drones and robots which could dramatically change how humanitarian aid or supplies for front-line troops are delivered.

HORIBA MIRA will develop its own end-to-end logistics resupply capability, using its latest all-terrain, multirole UGV platform, VIKING. The 6x6, two tonne robot, is integrated with advanced AI-based autonomous systems, including GPS denied navigation, advanced terrain perception and object recognition. It can deliver up to 600kg of supplies over 200km. The UGV system also uses a novel low-bandwidth communication system for command and control.

Using a hand-held terminal, users in the field can make logistics resupply demands which are passed to the UGV. VIKING, using its advanced autonomy, adapts its own route on roads, tracks and across complex terrain to deliver the supplies.

Of the 142 Phase One proposals originally submitted in the summer of 2017, HORIBA MIRA is now one of only five successful bids to enter Phase Two. The VIKING prototype ALMRS system will be tested and demonstrated alongside the British Army Warfighting Experiment, Autonomous Warrior Land, which takes place on Salisbury Plain in the autumn of 2018. All tests and evaluations on VIKING will take place in relevant front-line scenarios.

Andrew Maloney, Chief Engineer for UGVs and Defence at HORIBA MIRA, said: "DASA support is enabling us to take novel AI concepts and integrate them into a state-of-the-art unmanned vehicle, to develop an autonomous last mile system for demonstration in very short timescales. Working with the Dstl technical partners and stakeholders has helped us focus and steer our development to maximise exploitation potential and future benefits for UK MOD and other government stakeholders."

Gavin Williamson, Secretary of State for Defence, said: "Defence makes an unrivalled investment in science and technology, creating thousands of highly-skilled jobs and brilliant career opportunities, generating billions for the UK economy. This Autonomous Last Mile competition has seen next-generation concepts come to life and they could be saving troops' lives on the battlefield in years to come. I congratulate all those involved in the competition as they

ensure our military remains ahead of our adversaries."

HORIBA MIRA's work in the defence sector spans engineering consultancy, testing, product design and prototype build. With its combination of highly qualified and experienced staff and a unique collection of test and validation facilities, HORIBA MIRA is uniquely placed to provide comprehensive defence vehicle engineering solutions.

Contracts

General Dynamics Receives Delivery Order to Upgrade 100 Abrams Main Battle Tanks

STERLING HEIGHTS, Mich. -- The U.S. Army has signed a delivery order for General Dynamics Land Systems to upgrade 100 more M1A1 Abrams Main Battle Tanks to the state-of-the-art M1A2 System Enhancement Package Version 3 (SEPv3) configuration.

The delivery order is part of an Army Requirements Contract signed in December 2017 through which the Army can upgrade up to 435 M1A1 Abrams tanks to the M1A2 SEPv3 configuration. The M1A2 SEPv3 configuration features technological advancements in communications, reliability, sustainment and fuel efficiency, plus upgraded armor.

Work on this delivery order will be performed at Land Systems locations in Scranton, Pa., and Tallahassee, Fla., and at the Joint Systems Manufacturing Center in Lima, Ohio, the only operational tank plant in the country.

Initial pilot M1A2 SEPv3 Abrams tanks were delivered to the Army in October 2017.

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.

Contracts

Otokar Receives $28.9 Million Contract for its Armored Vehicles

Otokar, leading supplier of the Turkish Military and Security Forces for wheeled tactical vehicles, was awarded 28.9 million USD contract for its tactical wheeled armored vehicles. The delivery of the vehicles will be completed in the first quarter of 2019. The contract also includes spare parts and training services.

Highlighting Otokar's success at global markets, General Manager Serdar Gцrgьз stated, "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 with an outstanding performance. Our military vehicles serve almost 50 different end users in over 30 countries."

Gцrgьз continued: "Otokar continues to increase its armored vehicle deliveries in line with user expectations. The success of Otokar's vehicles has always been a reference for new orders. We are proud that this new order is awarded by an existing user of our armored vehicles. Otokar has also started to stand out in global scale not just for its products with fully-owned intellectual property rights, but also with its know-how, engineering, R&D and technology transfer capabilities."