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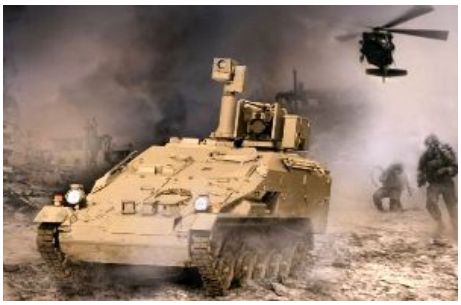
Robots

Rheinmetall Presents Next Gen "Wiesel Wingman" solution for Robotic Combat Vehicle – Light at AUSA 2019



Rheinmetall Defence is one of the world's leading providers of combat and tactical vehicles and is a global leader in developing next generation robotic, remote and autonomous combat vehicle capabilities. Rheinmetall will showcase its capabilities at the largest land warfare tradeshow in North America: the Association of United States Army annual meeting (AUSA 2019) taking place in Washington DC, 14-16 October 2019. On display will be a Wiesel/Weasel fighting vehicle, the platform that forms the basis for Rheinmetall's innovative "Wiesel Wingman" autonomous combat vehicle concept for the US Army Robotic Combat Vehicle – Light program. The Wiesel Wingman brings together capabilities of Rheinmetall's "Wiesel Digital" and Mission Master UGV vehicle platforms.

The Wiesel Wingman is based on Rheinmetall's Wiesel Digital, a fully digitalized version of the Wiesel that has been refined over the past years. This includes the full digitalization of the vehicle and the replacement of all mechanical and hydraulic transmission elements with a digitized transmission. In addition, the Wiesel Wingman is equipped with Drive by Wire (DbW) with triple redundancy. This DbW system has gone through rigorous testing, making the Wiesel Wingman the very first armored tracked vehicle certified for on-road use with DbW. The vehicle retains the high mobility found in existing variants of the Wiesel, with a top speed of 43mph and excellent maneuverability on various terrain due to its low GVW and low ground pressure.

The Wiesel Wingman armored hull protects all critical components against fragmentation and small arms fire. The vehicle can be equipped with a variety of systems; for the RCV-L the Wiesel Wingman includes a CROWS-J; other lethal variants are also possible, based on the payload capability of the Wiesel chassis. The vehicle has outstanding reconnaissance capabilities due to its superior mobility and its integrated tethered drone, which highly increases its surveillance and target identification capabilities. The Wiesel Wingman can be air-transported in a CH-47 and a CH-53 as an internal or external load. Two of the vehicles can easily fit into a C-130. This vehicle has been tested and proven during various exercises and trials by the US and German Army.

The Mission Master UGV, developed by Rheinmetall Canada, contributes its autonomous technologies to the Wiesel Wingman platform. This provides the Wiesel Wingman with a tried and true suite of sensors, universal platform control and navigation software. The Artificial Intelligence (AI) kit enables the vehicle to conduct semi-autonomous and autonomous operations, from remote-controlled steering to leader-follower operation and waypoint navigation. Obstacle avoidance, operation in environments lacking GPS and remote sensor/effector control make the Wiesel Wingman smartest, most robust vehicle in its class.

Its open software architecture and the sizable internal volume provides the US Army with significant growth potential for future technology.

Rheinmetall Canada's Mission Master UGV will be on display along with the Wiesel at AUSA, in both cargo and protection (armed) configurations. The Mission Master platform is a world leading autonomously operating UGV showcasing Rheinmetall's advanced developments in autonomous combat vehicle operating capabilities. The Mission Master features all-terrain and amphibious mobility, as well as silent drive mode. It can operate autonomously or semiautonomously.

In addition to a flexible storage system, the Mission Master -– Cargo can be fitted to suit both high and low profile operations. Its robust design can shoulder over a half-ton payload of supplies, equipment, and materials.

The Mission Master – Protection will feature the unique Rheinmetall Fieldranger Multi weapon station, armed with a 70 mm rocket launcher from Thales that recently demonstrated the ability to fire a salvo of 14 rockets, delivering 60 kg of explosives on objective in 1.6 seconds. The Mission Master – Protection can also support .50 cal. machine guns and 40 mm grenade launchers.

Future Technologies

Rheinmetall to Feature Next Generation 130mm Tank Gun at AUSA Global

Rheinmetall will showcase the Group's next generation 130mm tank armament at the largest land warfare conference and tradeshow in North America: the Association of United States Army annual meeting (AUSA 2019) taking place in Washington DC, 14-16 October 2019.

The 130mm developmental cannon delivers leap ahead capabilities in lethality for next generation main battle tanks. Rheinmetall is a global leader in armament and ammunition development and delivery. Rheinmetall developed its 130mm main gun technology demonstrator to address the emerging necessity of gaining significant performance enhancements against modern armored vehicles.

The 130mm live fire demonstrator has completed developmental efforts that have showcased superior

energy and output performance when compared to the standard 120mm L55/L55A1 cannon in a direct live fire test with modern targets. The 130mm/L51 smoothbore gun weighs (without mounting components) 3,000 kilograms with a barrel length of 6.63 meters.

As part of its Next Generation Combat Vehicle (NGCV) program, the US Army is exploring concepts to replace the Abrams tank fleet including considering manned and unmanned tank variants; larger armaments; next generation munitions; and unmanned turrets. In the coming months, the 130mm/L51 gun will undergo additional testing that is expected to confirm a substantial leap in performance when compared with in-service tank main armaments.

A MBT equipped with the 130mm cannon would be capable of successfully engaging better-protected opponents at greater ranges with superior firepower. Rheinmetall is also developing corresponding ammunition for use with the 130mm cannon. Rheinmetall is also developing an unmanned 130mm demonstrator turret featuring automated ammunition flow.

This system will be compatible with the European Main Ground Combat System (MGCS) project and can serve as a combat performance upgrade to all Leopard 2 user nations. The development also matches key developmental priorities in the US Army NGCV program. Rheinmetall is the main developer and manufacturer of 120mm smooth bore weapon systems in service today on the Leopard Main Battle Tank and the US Army Abrams Main Battle Tanks (via license to the US Army).

In the case of the Leopard, Rheinmetall also developed and supplied the ammunition for the smooth bore 120mm cannon. Continuously improving the performance of 120mm tank gun and ammunition technology has long been one of Rheinmetall's highest priorities.

Defence Industry

Denmark and Germany receive the latest versions of the LEOPARD 2

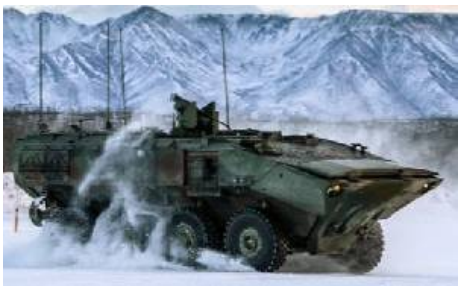
Munich -- Krauss-Maffei Wegmann (KMW) has handed the latest versions of the Leopard 2 over to Denmark and Germany. Frank Haun, Chairman of the Board of KMW, presented the symbolic keys of the first two vehicle systems to the Ambassador of the Kingdom of Denmark, Friis Arne Petersen, and the Parliamentary State Secretary of the Federal Ministry of Defence, Dr. Peter Tauber.

Both nations are receiving comparable variants of the Leopard 2 A7 main battel tank. Protection, mobility, firepower and commandability were significantly increased. The main features include an even higher protection level, high-performance power supply, new NBC and air conditioning systems as well as the integration of C4 I systems in order to meet the requirements of modern, networked operation. The modernisation of the driveline and a further optimisation of the weapon stabilisation during travel bolster the vehicles' agility and combat performance.

The Danish army will receive a total of 44 Leopard 2 A7 vehicles by 2022. The German Federal Armed Forces will gain 104 Leopard 2 A7V vehicles by 2023.

Defence Industry

U.S. Marine Corps orders more Amphibious Combat Vehicles



BAE Systems has received a $120 million contract from the U.S. Marine Corps for additional Amphibious Combat Vehicles under a third order for Low Rate Initial Production (LRIP).

This award is an important next step on the path to full rate production. This latest contract is for the ACV personnel carrier variant (ACV-P), an eight-wheeled amphibious assault vehicle capable of transporting Marines from open-ocean ship to shore and conducting land operations. Each vehicle embarks 13 Marines in addition to a crew of three.

"This award further validates the Marine Corps' confidence in the vehicle's proven capability in meeting their amphibious mission, and represents an important step toward fielding the vehicle in the Fleet Marine Force. The ACV is a highly mobile, survivable and adaptable platform designed for growth to meet future mission role requirements while bringing enhanced combat power to the battlefield," said John Swift, director of amphibious programs at BAE Systems.

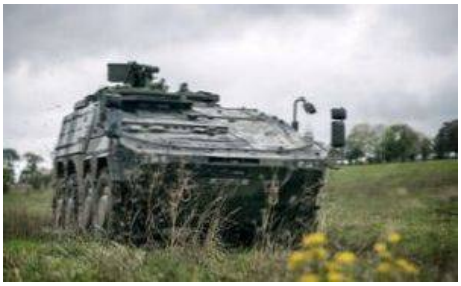
Current low-rate production is focused on the ACV-P variant. More variants will be added under full rate production to include the command and control (ACV-C), 30mm medium caliber turret (ACV-30) and recovery variants (ACV-R) under the ACV Family of Vehicles program. BAE Systems previously received the Lot 1 and Lot 2 awards.

The Marine Corps selected BAE Systems along with teammate Iveco Defence Vehicles for the ACV program in 2018 to replace its legacy fleet of Assault Amphibious Vehicles, which have been in service for decades and were also built by BAE Systems.

ACV production and support is taking place at BAE Systems locations in Stafford, Virginia; San Jose, California; Sterling Heights, Michigan; Aiken, South Carolina; and York, Pennsylvania.

Defence Industry

J2.8bn armoured vehicle contract secured for British Army



A contract worth J2.8 billion has been signed to provide state-of-the-art armoured fighting vehicles to the British Army. The Defence Secretary has announced that the army will receive more than 500 Boxer 8x8 high mobility, network-enabled armoured vehicles to transport troops onto the frontline.

Defence Secretary, Ben Wallace, said:

"Our men and women of the Armed Forces deserve to have the best equipment to do their job."

"The Boxer vehicle is a leader in its field and I look forward to it arriving in units from 2023."

The vehicles will form part of the Army's Strike brigades, new units set up to deploy rapidly over long distances across varied terrains.

Boxer is modular by design to meet these requirements - the same vehicle base can be rapidly reconfigured to fill different roles on the battlefield, from carrying troops across deserts to treating severely injured service personnel on the journey to hospital.

Initially the Army will buy a mixture of the troop-carrying variant, ambulances, command vehicles, and specialist designs to carry military equipment.

Sir Simon Bollom, Chief Executive of Defence, Equipment and Support (DE&S), said:

"This is excellent news for the Army and I'm delighted that we can now move forward with a contract for the Mechanised Infantry Vehicle."

"We are looking forward to continuing to work closely with the Army and our partners across industry to deliver the best equipment and support for our troops."

The UK announced in 2018 that it would re-join the Boxer programme within the Organisation for Joint Armament Cooperation (OCCAR) and explore options to modernise its vehicle fleet and meet the Army's Mechanised Infantry Vehicle requirement.

The UK played a central role in the original design, development and testing of the Boxer. In re-joining the programme last year, the UK reassumed the rights it had as a project partner.

Major General Simon Hamilton, Mechanised Infantry Vehicle Programme lead for the British Army, said:

"I am delighted that we have committed to delivering the Mechanised Infantry capability through the purchase of around 500 battle-winning Boxer vehicles for the British Army. Boxer completes the suite of platforms to equip our new state-of-the-art STRIKE brigade where, alongside Ajax, Boxer's low logistic need, extended reach, high-mobility, and advanced digitisation will ensure STRIKE is ready for any global scenario."

This contract was signed ahead of the pre-election period due to the strong value-for-money agreement reached with industry and other OCCAR nations, which expires on December 31st 2019, and announced today due to expected market implications. It would be possible for a new Government to take a different position.

The MOD Permanent Secretary, as the Accounting Officer, considered the value for money implications and, on this basis, determined the most appropriate course of action is to proceed with the contract award ahead of the election.