

Army advances human-machine integration tests to enhance, fight with combat units

By Joe Lacdan, Army News Service | October 29, 2024



[<https://api.army.mil/e2/c/images/2024/10/28/572df634/original.jpg>]

WASHINGTON — Robots integrated into Army formations can help protect Soldiers and revolutionize warfare in multiple domains.

Human-machine integration forces can take on dangerous battlefield operations, including overwatch, or movement of troops to a point of tactical advantage, and the suppression of the enemy, said Brig. Gen. Chad Chalfont, commandant of the Army Armor School at Fort Moore, Georgia.

Those capabilities could help achieve the Secretary of the Army's goal of "no blood for first contact," where human machine integrated formations make platoons and companies better at maneuvering, communicating and surviving on a transparent battlefield. HMIF could shoulder risk normally assumed by Soldiers.

Army Futures Command, headquartered in Austin, Texas, is scheduled to host the Human-Machine Integration Summit IV at Texas A&M University, College Station, Texas, on Nov. 6-7, 2024, to inform academic, industry and government partners on HMI development and explore cost-cutting solutions.

The Army has been working with prototypes and performing exercises with the new technology including robotic combat vehicles, or RCVs. On July 24, the Comanche Troop of 1st Squadron, 7th Cavalry Division, completed training exercises with the RCVs as part of Army Futures Command's RCV Pilot-24 exercise.

During the July exercises, Soldiers performed reconnaissance and security missions with the platoon using two control vehicles to navigate four robots, Chalfont said.

Chalfont said they learned they needed a third control vehicle for that platoon to operate effectively and to operate across different nets. They also learned techniques to better communicate within their platoon while also reporting up and out to their company commander.

The 1-7 Cavalry Troop, based out of Fort Cavazos, Texas, performed the exercise during a National Training Center rotation in September, but restructured the unit to use three control vehicles to control four RCVs.

The robotic combat vehicles were designed to act as scouts and combat escorts with a Soldier controlling the vehicle remotely. Those vehicles can also serve as decoys to protect Soldiers from enemy fire and assist the execution of multi-domain strikes. The Army originally had three RCV models in development but has since decided to focus on a single, lightweight variant.

Brig. Gen. Phillip Kiniery, Infantry School commandant at the Maneuver Center of Excellence at Fort Moore, said he wants to be able to take that infantry squad and maximize the cognitive and physical capabilities of that squad by putting the burden on the robot. He wants to increase the depth and duration by which an infantry squad can maintain contact with the enemy so that infantry squad leader can bring everything they have to bear as a system and overwhelm the enemy.

Col. Kevin Bradley, director of the Next Generation Vehicle Cross Functional Team at Detroit Arsenal in Warren, Michigan, said the Army has reached a pivotal time in its history where robotic technology could give U.S. forces a competitive advantage in maneuverability, like the period between World War I and World War II.

Bradley said just as the airplane, radio and tank were critical to unlocking maneuver in World War II, human-machine integration forces — the combination of robots, autonomy and their ability to reduce or offset risk — is the key to unlocking expanded maneuver in a transparent battlefield.

Chalfont cited the ongoing conflict in Ukraine as an example of the evolution of warfare, where Ukrainian forces have developed capabilities to fight against the Russian army. He said a cycle of adaptation is occurring in that conflict. The next question is what will forces do with that information and where does the adaptation occur?

Bradley said the Army will need to test to see if RCVs and other robotics platforms can keep pace or fight with a brigade combat team or an infantry brigade combat team.

Col. Scott Shaw, director of Maneuver Capabilities Development Directorate at Fort Moore, said the service absolutely wants Soldiers controlling multiple robots in the air and on the ground using the same device.

Shaw said the Army in some cases has a “two Soldiers to one robot” ratio and is very much working toward one Soldier controlling many robotic platforms.

He said that robots used in combat must have true maneuverability, be able to traverse different environments and be able to withstand some damage from enemy fires.

Col. Ken Bernier, project manager for future battle platforms at Detroit Arsenal said the Army will continue experiments integrating HMIF into its formations, eventually conducting a full operational test. Bradley said that after building the base platforms of the RCVs, the focus will shift toward technology and common control, including a focus on software.

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