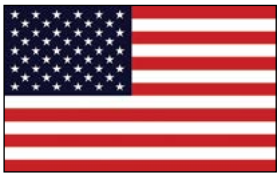

Interoperability key to successful EDGE22, future conflicts

By Amy Guckeen Tolson, DEVCOM Aviation & Missile Center Public Affairs

The U.S. Army never fights alone – and it doesn't experiment in a vacuum, either.

Faster. Farther range. Greater survivability. To the Warfighter, whether their uniform bears the flag of the United States or they're a member of the coalition forces, those attributes can mean the difference between life and death on the battlefield. That desire for advancing transformational capability and increasing interoperability brought more than 23 Department of Defense organizations and seven international allies to Dugway Proving Ground April 25-May 13 to experiment under harsh conditions at one of the nation's premier western test ranges for the Experimental Demonstration Gateway Event, or EDGE, 2022.

The annual exercise, sponsored by Army Futures Command's Future Vertical Lift Cross-Functional Team, allowed participants to assess new tactics, technologies and interconnecting architectures in an effort to ensure overmatch and decision dominance in future conflicts. The 19 days of learning, which centered around a tactical scenario that simulated a wet gap crossing in Europe, pushed the boundaries on a variety of efforts to include interoperability, the network, electronic warfare, multi-intelligence sensors, interactive drone swarming and enhanced sustainment.

The Wolfpack

Somewhere in the desert, Soldiers with the 82nd Airborne Division launch a swarm of Air Launched Effects, or ALE. Taking to the air, the drones conduct reconnaissance, detect potential threats and report back.

A second swarm of ALE launches, becoming an additive measure to overwhelm enemy threat systems.

Then comes a third swarm — it's kinetic, with the capability to take out a target or allow for long range fires.

Finally, a fourth swarm launches, performing battle damage assessment.

They call it the Wolfpack. EDGE22 marked the largest ALE swarm to date, maxing out at seven in one swarm, with only one pilot on the ground needed to execute the swarms' tasks. That layered capability will provide commanders real-time decision making, while keeping Soldiers out of harm's way, allowing for a situation to develop until ground forces are absolutely needed. The Wolfpack will deploy as a forward element of the Future Attack Reconnaissance Aircraft ecosystem in areas of expected enemy contact.

A variety of platforms were used to launch the ALE, not just aviation-centric, showcasing the importance of both air and ground operations. Also key to the evolving technology – the network.

Evolution of technology

A single Black Hawk flies at low altitude. A team of scientists and engineers meet the bird on the landing pad, carrying a Hellfire missile. After installing it on the Modular Effects Launcher, or MEL. The Black Hawk – acting as a surrogate for the Future Attack Reconnaissance Aircraft, or FARA – takes to the sky again, flying out to meet its target.

Minutes later, target destroyed – mission complete.

It was a first for the MEL, and one of more than 30 technological firsts out of 67 technical objectives at EDGE22. But more importantly, Army leaders said, was the innovation and evolution of technology that occurred, with Soldiers, scientists, engineers and international partners working side by side. Soldiers from the 82nd Airborne provided a mission command element, as well as some air assets and an infantry platoon, to allow for technologies to be operationalized and integrated.

Case in point: the MEL, which will enable the FARA to integrate, carry and launch the variety of current, developmental and future weapons needed for Multi Domain Operations. EDGE22 firsts for the launcher that employs a modular open systems approach, so it can fit a variety of weapon systems, also included flight operations in multiple configurations and captive carry of a special purpose mission equipment pod.

"The [Aviation and Missile Center] team successfully completed the first ever Hellfire missile engagement from the Modular Effects Launcher," said Col. Justin Highley, commander for the U.S. Army Combat Capabilities Development Command Aviation & Missile Center's Technology Development Directorate – Aviation Systems Integration & Demonstration. "The MEL provides Army aviation the ability to rapidly integrate and employ various

More than 23 Department of Defense organizations and seven international Allies experiment under harsh conditions at one of the nation's premier western test ranges for the Experimental Demonstration Gateway Event 2022. (Photo Credit: U.S. Army photo)

weapons and capabilities, and we previously demonstrated the ability to launch ALEs and 2.75" rockets."

Other technologies that were able to move the ball down the field in terms of capabilities at EDGE22 included a high altitude solar powered glider that set a record for time aloft at 26 hours, and oftentimes returned with more power than when it had taken off. EDGE22 was also the first opportunity to confirm bi-directional communications between the Integrated Visual Augmentation System and Enhanced Night Vision Goggle-Binocular.

'We never fight alone'

To meet emerging challenges, the U.S. Army is boldly transforming to provide the joint and coalition forces with the speed, range and convergence of cutting-edge technologies needed for future decision dominance and overmatch in strategic competition. EDGE22 marked the first time international partners were invited to participate in the campaign of learning. Italy, Germany and Canada all brought soldiers and equipment to Utah, while Australia, France, the Netherlands and United Kingdom, sent observers.

The Italians, Dutch and Germans all experienced firsts with the systems they brought to Dugway, and walked away with a greater technical understanding of how they would connect to the network.

People are the foundation for everything the Army does, and as evidenced at EDGE, the Army is making sure it has the right people, allies and partnerships with the right skills and training, in the right roles, to succeed in complex future missions. EDGE proved that partnering with allied nations strengthens relationships, and furthers the next generation of vertical lift capability and employment in future operations.

"If you want to fight together, cooperate, you have to start cooperation with the development of your concepts, to have a clear view that you have nearly the same concepts," said German Brig. Gen. Thomas Czirwitzky, director of external relations, Armaments Projects, German Army Concepts and Capabilities Development Centre. "From this starting point you can then develop and realize your concept, together, so you have the possibility to cooperate in the real fight."

U.S. Army leaders echoed that sentiment.

"We never fight alone," said Brig. Gen. Brandon Tegtmeier, deputy commanding general of the 82nd Airborne Division. "You look at what we're doing in Europe. We're always with our Allies and partners, and it's always a big effort to work interoperability at the beginning of a fight or in a fight. Here we're baking it into the technologies earlier with all the partners that are here. That is a big step."

The DEVCOM Aviation & Missile Center, headquartered at Redstone Arsenal, Alabama, is the Army's research and development focal point for advanced technology in aviation and missile systems. It is part of the U.S. Army Combat Capabilities Development Command (DEVCOM), a major subordinate command of the U.S. Army Futures Command. AvMC is responsible for delivering collaborative and innovative aviation and missile capabilities for responsive and cost-effective research, development and life cycle engineering solutions, as required by the Army's strategic priorities and support to its Cross-Functional Teams. ■