I MEF Marines Evaluate Fiber-Optic FPV Drones During DIU Challenge

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MARINE CORPS BASE CAMP PENDLETON, Calif. – U.S. Marines with I Marine Expeditionary Force partnered with the Defense Innovation Unit and industry professionals, Jan. 27-29, 2026, to evaluate first-person view small unmanned aircraft systems that use fiber optic cables, marking the U.S. Marine Corps' first field evaluation of the technology for sUAS employment in contested environments.

The three-day assessment focused on "ready now" FPV drone solutions designed to maintain command-and-control and video feeds when radio-frequency links are degraded. Unlike

traditional unmanned aircraft systems that rely on wireless signals, fiber optic cables provide a physical data connection between the operator and the aircraft, reducing vulnerability to electronic warfare and enabling more reliable employment in denied environments.

The evaluation brought together Marines from 3rd Light Armored Reconnaissance Battalion and 1st Light Armored Reconnaissance Battalion, with I MEF coordinating the event alongside DIU as part of Project G.I., a Department of War-wide effort intended to accelerate the fielding of solutions that address warfighter problem sets for the joint force. Participating vendors for the fiber-optic evaluation included Auterion, Kraken, ModalAI, Neros, and Nokturnal AI, with support from Contact Front Technologies.

“Fiber-optic tethered FPV capabilities are required on today’s battlefield,” said Col. Michael Carroll, assistant chief of staff, G-9, I Marine Expeditionary Force. “By deliberately building trained cadres within the command, I MEF is positioned to scale pilots and capability rapidly, and to responsibly leverage every opportunity to integrate, evaluate and familiarize warfighters with proven systems.”

During the event, Marines evaluated systems based on how quickly operators could transport, set up and employ the aircraft while wearing full combat equipment, as well as the durability of controllers, displays and supporting equipment. Marines also assessed how effectively each platform integrated with tactical command-and-control tools and how reliably the fiber optic cable performed during over-water control and data transmission. The over-water flights marked the U.S. Marine Corps’ first deliberate over-water evaluation of fiber-optic cable performance for FPV sUAS.

The event also served as a hands-on integration point for participating companies, allowing engineers to observe operator workflows and receive direct feedback on

usability, reliability and mission-driven requirements. Marines compiled observations and recommendations throughout the assessment to inform iterative improvements and future evaluations.

“The pace of change in robotics and autonomous systems is unlike anything we’ve seen before. Capabilities are evolving daily, not over years,” said Maj. Steven Atkinson, I MEF DIU mission partner. “In that environment, there will never be a single ‘silver bullet’ system, which is why the Blue UAS List must be continuously updated with a diverse set of best-of-breed platforms and components. Through our partnership with DIU, I MEF brings together Marines from multiple units, MOSs, and backgrounds to do exactly that, ensuring the systems added to the Blue List are not only policy-compliant, but operationally lethal, interoperable, and survivable in contested environments.”

Project G.I. launched in June 2025 with a prize funding pool to support live evaluations across multiple design reference missions. The project used an accelerated approach intended to move mature technology from proposal to hands-on testing in months rather than years. DIU designed the effort to involve operators early, stress systems against real operational constraints and rapidly iterate toward capabilities that can be integrated and scaled for units across the services.

I MEF has played a leading role in the challenge by organizing field-based evaluations, bringing together Marines with recent operational experience and ensuring feedback from end users is captured, translated into actionable requirements and pushed directly to industry teams. Last summer, Marines assigned to I MEF partnered with DIU and vendors during a larger Project G.I. evaluation at Marine Corps Base Camp Pendleton, which combined familiarization training with scenario-based demonstrations and informed follow-on selection and development.

The January event built on that momentum by concentrating on fiber optic cable performance, a capability increasingly associated with maintaining drone effectiveness under electronic attack. Marines assessed how FPV systems connected by fiber optic cables could support tactical kinetic-effects while sustaining control and video in environments where traditional links can be disrupted.

“A fiber optic cable connected to an attack drone gives the ground force commander more options when it comes to precision fires in a GPS or communications-denied environment,” said 1st Lt. Kienan Morrissey, an intelligence officer with 3rd Light Armored Reconnaissance Battalion who directly supported the evaluations. “Operator-to-vendor feedback is critical in this phase of the evaluation to ensure drone systems are mission capable, continuously improved and lethal in the hands of the end users.”

Insights from the evaluation will inform continued refinements as Project G.I. advances. As platforms complete compliance verification and cybersecurity review, selected systems are expected to move closer to procurement pathways and broader availability for DoW purchase and operation.

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