Ukraine’s fiber-optic drones get squeezed by AI data center demand

Impervious to battlefield jamming, drones physically connected to human operators by miles of fiber-optic cables have become such a common weapon of war in Ukraine that trees and fields are strewn with tangled cables thinner than fishing lines. But importing such fiber-optic material from China has become more costly as drone warfare’s needs compete with global demand from AI data centers for the same limited supply—and so Ukrainian drone makers have been adapting.

Since the full-scale Russian invasion of Ukraine began in February 2022, the Ukrainians have been forced out of necessity to continually develop battlefield innovations involving first-person view (FPV) quadcopter drones and other heavier types of drones. But it was the Russian military that first deployed unjammable fiber-optic drones to repel Ukrainian forces’ cross-border incursion into the Kursk Oblast in 2024. The Ukrainians quickly followed suit in developing their own fiber-optic drones, given the drones’ capability to shrug off electronic warfare jamming that could neutralize radio-controlled drones.

Russia and Ukraine have relied on Chinese suppliers for some off-the-shelf drones and a wide array of drone components, including bulk orders of fiber wound around very large spools or sometimes small finished spools ready for installation on drones. The finished spools can hold enough fiber-optic cable for drones to regularly operate at ranges of dozens of miles, and sometimes up to 62 miles (100 kilometers) in extreme cases, as reported by the independent Russian publication The Insider.

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