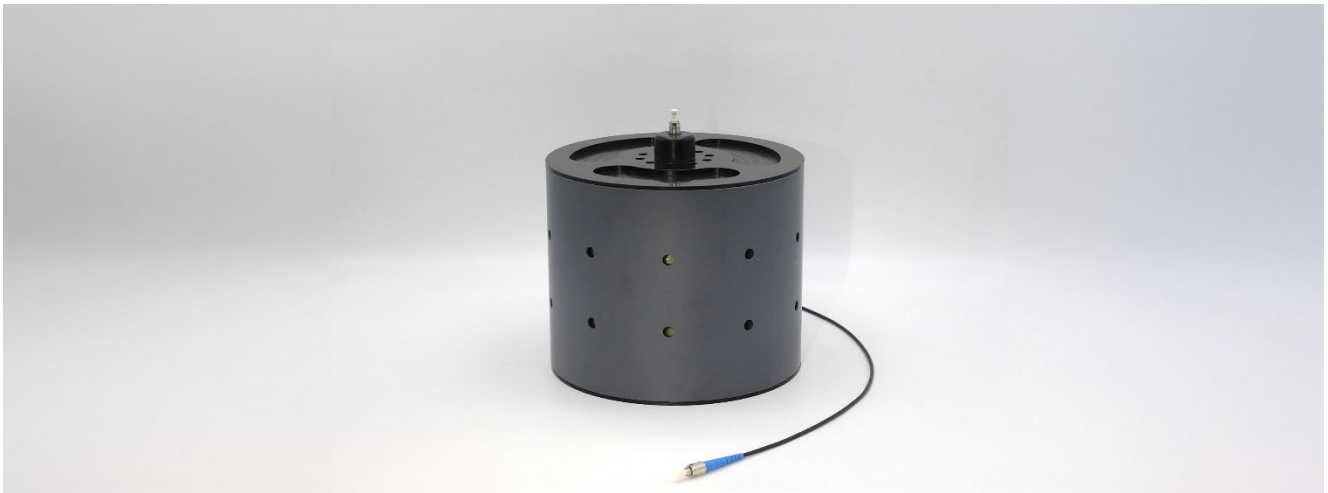

A French fiber-optic guidance spool extends drone range to 50 km



SEDI-ATI expands its RBOB range with a new 50 km optical fiber tether spool designed for unmanned vehicles. This version extends operational limits in range, deployment speed, and data transmission, even in demanding environments.

The RBOB series is compatible with all types of unmanned ground vehicles (UGV), aerial vehicles (UAV), underwater vehicles (UUV), and amphibious vehicles (HAUV). Its design, inherently immune to RF jamming, allows the drone to operate in disrupted, confined, or densely vegetated environments without relying on any radio link.

Mounted directly on the drone, the spool ensures fiber deployment without mechanical constraints, as the fiber naturally pays out as the vehicle moves. Complex maneuvers such as circular motion, obstacle avoidance, or water entry and exit do not pose an issue. The optical fiber is never a “leash” for the guided vehicle and provides continuous real-time communication between the platform and the control station. In addition, a hermetic interface ensures water tight integrity, including for deep-water operations.

The 50 km version provides an operational range of up to 50 kilometers, with high-speed deployment reaching 90 km/h (56 mph). It supports real-time bidirectional communication while offering complete immunity to electromagnetic interference (EMI), ensuring secure and uninterrupted data transmission under all mission conditions.

Operating with single-mode fiber (1310–1550 nm), optimized for long-distance guidance, the system supports HD video transmission and high-volume data transfer from onboard sensors. It is designed as a disposable system; however, field reconnection is possible using a rapid connectorization kit.

Compact and optimized for operational environments, the spool weighs 6.3 kg (13.9 lbs) in air and 1.7 kg (3.7 lbs) in seawater. It measures 183 mm (7.2 in) in height and 220 mm (8.7 in) in diameter.

Available in a wide range of weights and form factors, the RBOB series now covers lengths from 1 km to 50 km (1, 2, 5, 10, 20, 30, and 50 km). Custom configurations – including connectors, packaging, and specific integration – are available upon request.

[About SEDI-ATI by FOG](#)

Founded in 2012 as the successor to ATI Optique (established in 1951) and SEDI Fibres Optiques (established in 1972), SEDI-ATI is a French company specializing in the design and manufacture of custom passive fiber-optic assemblies for complex and extreme environments. Since 2023, it has been part of Fiber Optics Group, a global leader in fiber-based photonic solutions. SEDI-ATI serves demanding markets including defense, space, industry, data communications, quantum technologies, and medical applications. The company designs optical fiber spools for tethered guidance of ground, aerial, and underwater vehicles, with operational capabilities reaching up to 50 kilometers.

[More information](#)



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