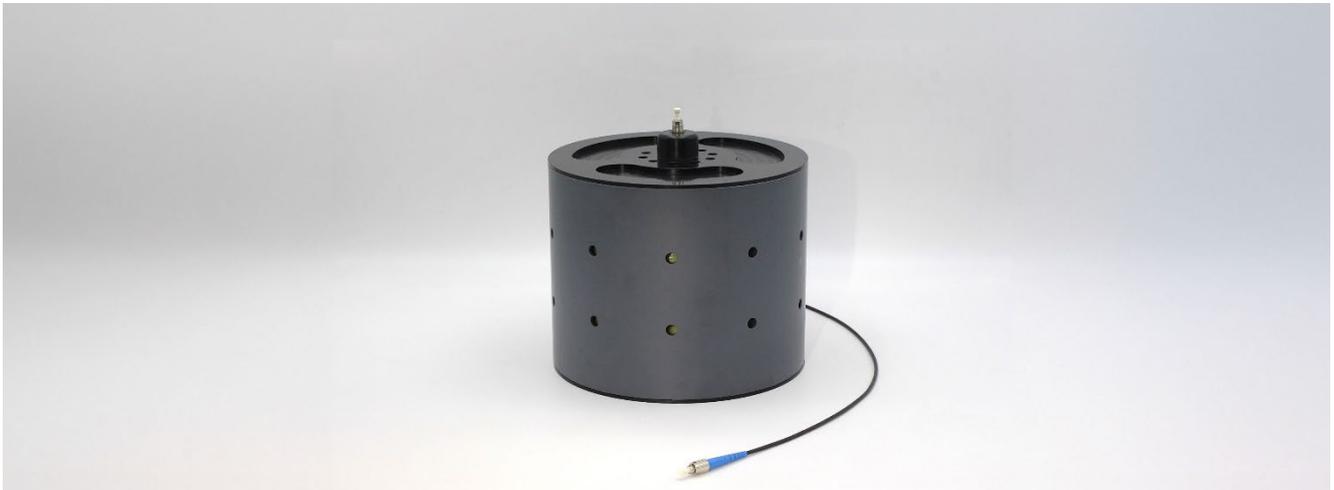

A French fiber-optic guidance spool extends drone range to 50 km



SEDI-ATI expands its RBOB range with a new 50 km optical fiber tether spool dedicated to unmanned vehicles. This new version pushes operational limits in terms of range, deployment speed, and data transmission 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, intrinsically immune to RF jamming, enables 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 smooth fiber deployment without mechanical constraints, as the fiber naturally unspools as the vehicle moves. Complex maneuvers such as circular movements, obstacle avoidance, or water entry and exit are not 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 watertight integrity, including for deep-water operations.

The 50 km version offers an operational range of up to 50 kilometers with high-speed deployment reaching up to 90 km/h (56 mph). It provides real-time bidirectional communication while guaranteeing total immunity to electromagnetic interference (EMI), ensuring secure and continuous communication regardless of mission conditions.

Operating with single-mode fiber (1310–1550 nm), ideal for long-distance guidance, it ensures HD video transmission and high-volume data transfer from onboard sensors. The system is designed to be disposable (non-recoverable). However, field reconnection remains possible thanks to 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, with dimensions of 180 mm (7.1 in) in height and 230 mm (9.1 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 are available upon request (connectors, packaging, specific integration).

[About SEDI-ATI by FOG](#)

Founded in 2012 as the successor to two companies established in 1951 (ATI Optique) and 1972 (SEDI Fibres Optiques), 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, SEDI-ATI has been part of Fiber Optics Group, a global leader in fiber-based photonic solutions. Its solutions serve demanding markets such as defense, space, industry, data communications, quantum technologies, and medical applications. In particular, SEDI-ATI designs optical fiber spools for the tethered guidance of ground, aerial, and underwater vehicles, with capabilities reaching up to 50 kilometers.

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