

GEO Tactical SATCOM for Maritime Operations

Extending C2, telemetry, voice and IP connectivity to vessels at sea — beyond the reach of terrestrial cellular and RF infrastructure.

Navies, coast guards and commercial maritime operators increasingly operate beyond the reach of terrestrial communications infrastructure. Once vessels move away from shore, coastal cellular and line-of-sight RF coverage become unavailable. This challenge is even more critical for the growing number of unmanned maritime platforms, which depend on continuous links for command transmission and telemetry return. Manned vessels also require reliable two-way connectivity for operational data and voice with shore-based command infrastructure. A second challenge is the maritime environment itself: vessel motion, vibration, humidity and salt fog place demanding requirements on terminal design and link continuity.



THE CHALLENGE

Connectivity ends at the coastal horizon

- ▶ Beyond the reach of coastal cellular and terrestrial RF infrastructure, vessels can lose continuous communications with shore-based command systems.
- ▶ Unmanned maritime platforms are especially dependent on reliable communications for C2: commands toward the vessel and telemetry back to shore.
- ▶ Vessel motion, pitch, roll and heading changes demand reliable communications-on-the-move (COTM), while salt fog, humidity, spray and vibration impose additional maritime environmental requirements.
- ▶ Manned vessels require two-way operational data connectivity and voice communications between the vessel and shore-based control infrastructure.

The HiSKY solution

HiSKY provides a portfolio of compact Ku- and Ka-band maritime SATCOM terminals designed to maintain two-way connectivity for manned and unmanned vessels beyond terrestrial coverage. The terminals support communications-on-the-move and are designed to meet maritime environmental requirements, including sealing and salt-fog exposure. Standard IP interfaces allow straightforward integration with vessel systems for C2, telemetry, operational data and voice. The network is controlled and monitored through the HiSKY HUB and Space Control (NMS).

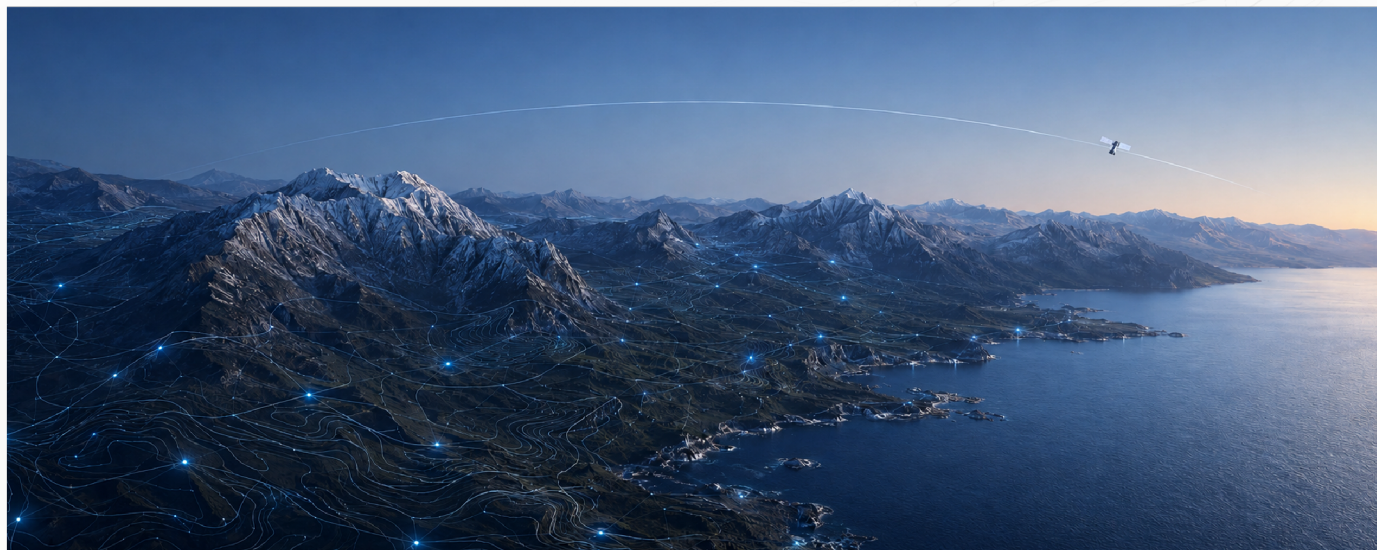
Terminal — Portfolio of compact Ku- and Ka-band COTM terminals, marine-qualified

Service tier — Ku- and Ka-band GEO; standard IP interfaces

Deployment — Manned and unmanned vessel COTM (deck / mast mount) + fixed maritime installations

SYSTEM ARCHITECTURE

From the vessel to shore-based command over one private network



How it works — the compact Ku- or Ka-band COTM terminal on the vessel (deck or mast mount) closes the link to the GEO satellite; the HiSKY HUB lands it on the customer's private network. Standard IP interfaces carry C2, telemetry, operational data and voice between the vessel and shore — monitored and controlled end to end through Space Control (NMS).

WHY HiSKY

A private network, qualified for the sea

► Private, secure communications network

HiSKY enables a dedicated network that can operate independently of public Internet and GPS infrastructure, supporting secure mission communications at sea.

► C2 and telemetry for unmanned vessels

Continuous two-way connectivity supports command transmission to unmanned maritime platforms and telemetry return to shore-based control systems.

► Standard IP integration

HiSKY terminals connect to vessel systems using standard IP protocols, enabling two-way C2, telemetry, operational data and voice without proprietary vessel-side interfaces.

► Maritime-qualified terminal portfolio

Ku- and Ka-band terminals are designed for maritime environmental requirements, including sealing, salt fog, humidity, spray and vessel motion.

► Low-SWaP terminals for small and medium vessels

Compact, low-power terminals reduce topside footprint and power demand, while supporting competitive hardware and satellite-service economics.

► Efficient multi-vessel networking

HiSKY supports fleets and groups of maritime platforms over shared satellite resources, maximizing spectral efficiency while maintaining centralized network control through Space Control (NMS).

MARITIME ENVIRONMENTAL QUALIFICATION

HiSKY's maritime terminal portfolio is designed to meet the environmental demands of vessel deployment, including sealing and resistance to salt fog, humidity, spray and continuous motion. This allows compact Ku- and Ka-band terminals to be deployed on exposed vessel locations while maintaining reliable connectivity in demanding marine conditions. The same network architecture can support both military / government fleets and commercial maritime operations.

RESULTS & VALUE DELIVERED

Before and after HiSKY

CATEGORY	BEFORE HISKY	AFTER HISKY
Connectivity	VHF/UHF radio and cellular lost beyond the coastal horizon	Continuous two-way C2, telemetry, operational data and voice via satellite — under way and at anchor
Unmanned vessel C2	Loss of terrestrial coverage interrupts command and telemetry links	Commands to the vessel and telemetry return to shore over a persistent SATCOM link
Fleet / swarm efficiency	Separate links or inefficient capacity allocation across multiple vessels	Shared network resources support multiple maritime platforms while maximizing spectral efficiency
Environmental durability	Conventional terminals degraded by salt, spray and humidity; frequent maintenance	Marine-qualified terminals designed for sealing, salt fog, humidity, spray and motion
Business outcome	Vessels lose connectivity beyond terrestrial coverage → delayed command, telemetry and operational coordination	Resilient C2 and telemetry for unmanned vessels, plus operational data and two-way voice for manned vessels

“Compact maritime SATCOM beyond terrestrial coverage — C2 and telemetry for unmanned vessels, and operational data and voice for manned vessels, over a private HiSKY network.”

— HiSKY maritime value proposition

WHY HISKY — COMPETITIVE CONTEXT

Selection criteria

Maritime operators typically weigh L-band MSS services, conventional stabilized-dome Ku/Ka VSAT systems, and global LEO broadband services. HiSKY is differentiated by a portfolio of compact low-SWaP Ku- and Ka-band terminals, maritime environmental qualification, COTM capability, standard IP integration, and a private network architecture that can operate independently of public Internet and GPS infrastructure. The same network can efficiently support multiple manned and unmanned vessels while maximizing use of satellite capacity.

CRITERION	WEIGHTING	HISKY SCORE
C2, telemetry & two-way voice performance	High	★★★★★
Continuity on the move at sea (COTM)	High	★★★★★
Terminal size, weight, power & ease of vessel installation	Medium	★★★★★
Coverage across the area of operations (coastal to open sea)	High	★★★★★
Standard IP integration with vessel systems	High	★★★★★
Maritime environmental qualification — sealing, salt fog & motion	High	★★★★★
Private network, multi-vessel efficiency & centralized NMS control	Medium	★★★★★

DEPLOYMENT SNAPSHOT

What is fielded

SITES / TERMINALS

Manned or unmanned vessel (COTM) + compact Ku/Ka terminal; shared satellite resources can support multiple maritime platforms

DEPLOYMENT TIMELINE

On the land-border reference, the customer operated the system independently in less than a week from the start of teleport installation; a comparable timeline is expected for vessel fit-out.

INTEGRATION

Standard IP integration with vessel C2, telemetry, operational data and voice systems, connected through the HiSKY Ku/Ka terminal portfolio

MANAGEMENT

Space Control (NMS) — centralized monitoring and network control of connected vessels from shore

REFERENCE STATUS

Maritime adaptation of a proven land-border reference — to be validated with first maritime deployment (**Restricted**)

PRODUCTS

HiSKY maritime SATCOM solution: portfolio of compact Ku- and Ka-band COTM terminals (marine-qualified), HiSKY HUB, Space Control (NMS)

REPLICATION POTENTIAL

Addressable prospect profile

Any navy, coast guard, maritime-security agency or commercial operator running manned or unmanned vessels beyond coastal cellular and terrestrial RF coverage — requiring C2, telemetry, operational data or two-way voice over a compact maritime SATCOM solution.

- ▶ **Navy & coast guard.** Manned and unmanned patrol craft, OPVs and fast boats — C2, telemetry, operational data, voice and blue-force tracking.
- ▶ **Offshore energy.** Oil & gas platforms, offshore wind, supply and crew-transfer vessels.
- ▶ **Fishing fleets.** Catch reporting, weather, safety, operational data and voice connectivity beyond coastal coverage.
- ▶ **Maritime security & border police.** EEZ, port and harbour protection, anti-smuggling operations.
- ▶ **Commercial shipping.** Operational data, remote diagnostics and two-way voice connectivity with shore.
- ▶ **Ferries, research & special-mission vessels.** Operational data, voice and IP connectivity beyond terrestrial coverage.

HiSKY PRODUCTS IN THIS USE CASE

One sovereign system

TERMINAL

Ku / Ka COTM terminals
compact, marine-qualified



HUB SYSTEM

HiSKY HUB modem + packet processor



NMS

Space Control Standard / Premium



Centralized monitoring and network control of connected vessels from shore.