

GNSS-Resilient Positioning for Mission-Critical Platforms

Reliable positioning when GPS is unavailable, jammed or spoofed —
using the existing HiSKY GEO SATCOM infrastructure.

Modern military and autonomous platforms increasingly operate in environments where GNSS signals are jammed, spoofed or unavailable. Operators require resilient positioning that continues even when GPS cannot be trusted.



THE CHALLENGE

When GPS cannot be trusted

- ▶ GPS jamming and spoofing threaten mission success.
- ▶ Alternative positioning solutions increase SWaP and integration complexity.
- ▶ Mission continuity requires resilient PNT.
- ▶ Additional navigation hardware increases platform cost.

The HiSKY solution

HiSKY GPS transforms the existing GEO SATCOM terminal into a resilient positioning sensor. By combining Time-of-Arrival ranging, Doppler processing and two GEO satellites, the solution provides positioning without GNSS while maintaining normal satellite communications. No additional RF hardware or antennas are required.

Terminal — Dynamic Ka/Ku terminal

Service tier — Private GEO SATCOM + positioning

Deployment — Embedded platform

SYSTEM ARCHITECTURE

Two GEO satellites, one terminal, a position fix without GNSS



How it works — the platform's Dynamic Ka/Ku terminal keeps its normal SATCOM link while HiSKY GPS measures Time-of-Arrival and Doppler against two GEO satellites and the ground HUB. The result is a continuous position solution that does not depend on GPS — with no additional antennas or RF hardware onboard.

WHY HiSKY

Positioning from the terminal you already carry

► No additional onboard RF hardware

Positioning is computed from the SATCOM link itself — no extra antennas, no extra payload.

► Uses the existing HiSKY terminal

A software-enabled capability on the Dynamic Ka/Ku terminal already fielded on the platform.

► Integrated communications and positioning

One terminal delivers both the private SATCOM link and resilient PNT, managed through Space Control (NMS).

► Independent of GNSS

Time-of-Arrival ranging and Doppler processing against two GEO satellites keep the fix alive when GPS is jammed or spoofed.

► Low SWaP

No added size, weight or power — the platform's SWaP budget stays where it was.

► Selected over INS, vision and dedicated PNT

Evaluated against GNSS-only navigation, INS, vision-based navigation and dedicated PNT systems — chosen for minimal SWaP and seamless integration.

RESULTS & VALUE DELIVERED

Before and after HiSKY

CATEGORY	BEFORE HiSKY	AFTER HiSKY
Positioning	GPS dependent	GNSS resilient
Hardware	Dedicated navigation payload	Existing terminal reused
Mission resilience	Vulnerable to jamming	Operational continuity
SWaP	Additional equipment	No extra RF hardware
Business outcome	Navigation interruptions	Reliable PNT

WHY HiSKY — COMPETITIVE CONTEXT

Selection criteria

The customer evaluated GNSS-only navigation, INS, vision-based navigation and dedicated PNT systems. HiSKY was selected because it delivers resilient positioning using the existing SATCOM terminal with minimal SWaP and seamless integration.

CRITERION	WEIGHTING	HiSKY SCORE
GNSS independence	High	★★★★★
Additional hardware	High	★★★★★
SWaP	High	★★★★★
Integration	High	★★★★★
Operational continuity	High	★★★★★

DEPLOYMENT SNAPSHOT

Where it runs

PLATFORMS

UAVs, UGVs, tactical vehicles,
maritime platforms

DEPLOYMENT TIMELINE

Software-enabled capability using
the existing HiSKY terminal

INTEGRATION

Mission computer, IMU,
existing HiSKY terminal

MANAGEMENT

Space Control (NMS)

REFERENCE STATUS

Restricted

PRODUCTS

HiSKY Dynamic Ka/Ku
terminal, HiSKY HUB, Space
Control (NMS)

REPLICATION POTENTIAL

Addressable prospect profile

Applicable to defense forces, autonomous-systems developers, border-security agencies and critical-infrastructure operators requiring resilient positioning in GNSS-denied environments.

HISKY PRODUCTS IN THIS USE CASE

One sovereign system

TERMINAL

Dynamic Ka/Ku terminal



HUB SYSTEM

HiSKY HUB modem + packet
processor



NMS

Space Control Standard /
Premium



Full network sovereignty and
mission-grade redundancy.