

CASE STUDY

A GLOBAL SATELLITE BROADBAND PROVIDER BUILDS A COMPLIANCE-READY LAWFUL INTERCEPTION FRAMEWORK IN INDIA WITH PERTSOL iINTERCEPTOR



INTRODUCTION

A leading global satellite broadband provider is preparing to deliver high-speed satellite communication services across India under the Global Mobile Personal Communication by Satellite (GMPCS) licensing framework. As part of its regulatory obligations, the provider must implement lawful interception capabilities to comply with mandates issued by the Department of Telecommunications (DoT).

Operating a satellite-based internet infrastructure presents unique compliance challenges due to large-scale traffic volumes, distributed network architecture, and the requirement to support lawful monitoring without disrupting live subscriber services.

To address these challenges, the provider selected PertSol as its lawful interception partner as part of its India market entry. The deployment of the iNterceptor platform enabled the establishment of a scalable, compliance-ready interception environment, reflecting strong confidence in PertSol's ability to support regulatory compliance within complex, next-generation satellite broadband ecosystems.

CHALLENGES

As the satellite broadband provider prepared to launch regulated services in India, it needed to implement a lawful

interception framework capable of operating within a high-capacity satellite internet environment while meeting strict regulatory mandates. Key challenges included:

- ✓ **Meeting DoT lawful interception compliance under GMPCS licensing**
Satellite communication providers operating in India must implement lawful interception systems aligned with DoT mandates and regulatory monitoring obligations required under the GMPCS licensing framework.
- ✓ **Interception within a high-throughput satellite broadband environment**
The satellite internet network operates at extremely high traffic volumes across distributed Points of Presence (PoPs), requiring the interception platform to reliably capture and process large-scale traffic streams without packet loss.
- ✓ **Subscriber identification and traffic correlation in NAT environments**
The network architecture relies heavily on NAT-based traffic routing, making it difficult to accurately map internet activity to individual subscribers and correlate sessions across large-scale traffic flows during lawful interception operations.
- ✓ **Real-time target activation and warrant-driven control**
The framework needed to enable real-time activation and deactivation of interception targets based on lawful authorizations across distributed network environments.
- ✓ **Multi-LEA interception and data isolation**
The solution needed to support concurrent interception by multiple authorized agencies while ensuring strict data separation and compliance with regulatory requirements.
- ✓ **Secure exchange of subscriber and network metadata**
The interception solution needed to support secure exchange of NAT binding information, subscriber identifiers, device metadata, and network telemetry while maintaining strong encryption and authentication controls.
- ✓ **Ensuring interception without impacting live subscriber services**
Lawful interception capabilities had to be implemented without introducing latency, packet loss, or operational disruption to active satellite broadband services.
- ✓ **Scalable interception architecture for future traffic growth**
As satellite broadband adoption expands, the interception platform needed to support increasing traffic volumes and additional monitoring targets while maintaining consistent system performance.

WHY THEY CHOSE PERTSOL

The satellite broadband provider selected PertSol to implement a lawful interception framework capable of supporting regulatory compliance for satellite communication services in India. PertSol's iNterceptor platform aligned with the provider's obligations under DoT mandates and GMPCS licensing requirements while enabling standards-aligned interception outputs for lawful handover to authorize agencies.

Operationally, PertSol delivered an interception approach suited for high-capacity satellite broadband environments, allowing interception to be implemented without disruption to live services or intrusive changes to production network elements. Combined with PertSol's deployment experience and responsive support, the provider gained confidence in establishing a stable compliance framework capable of supporting large-scale satellite internet operations.

SOLUTION

PertSol implemented a centralized lawful interception architecture using the iNterceptor platform, designed to operate within the satellite broadband infrastructure and aligned with DoT, TEC-GR, and ETSI interception standards. The deployment follows a passive interception model, supporting compliance under GMPCS, ISP, and VSAT licensing frameworks while enabling standards-aligned lawful handover to authorized LEAs.

KEY ELEMENTS OF THE IMPLEMENTATION INCLUDED:

- ✔ Enabled **full traffic monitoring across mirrored network streams**, allowing the system to identify and activate interception targets in real time without impacting live traffic flows.
- ✔ Integrated interception points with the **centralized iNterceptor Management System and Mediator**, enabling centralized warrant handling, target provisioning, monitoring, and compliance audit controls.
- ✔ Deployed **probe-based interception systems at network PoPs** to capture mirrored satellite internet traffic for lawful monitoring.
- ✔ Implemented **UT-ID-based traffic correlation mechanisms** to uniquely identify subscriber activity across large-scale NAT-based network environments.
- ✔ Enabled secure exchange of **subscriber and network metadata**, including NAT binding information & device identifiers, through encrypted communication interfaces secured using **mutual TLS (mTLS)** authentication.
- ✔ Configured the platform to generate **Interception Related Information (IRI) and Call Content (CC)** required for lawful interception workflows.
- ✔ Enabled **ETSI H12 and H13 aligned handover interfaces** for secure delivery of interception outputs to authorized law enforcement agencies.
- ✔ Dimensioned the system to support **large-scale monitoring requirements**, including up to **3000 active targets, 200 keywords, and connectivity for multiple LEAs per PoP**.
- ✔ Designed the interception architecture to support **high-throughput satellite broadband environments**, ensuring reliable monitoring without impacting live subscriber services.

RESULTS

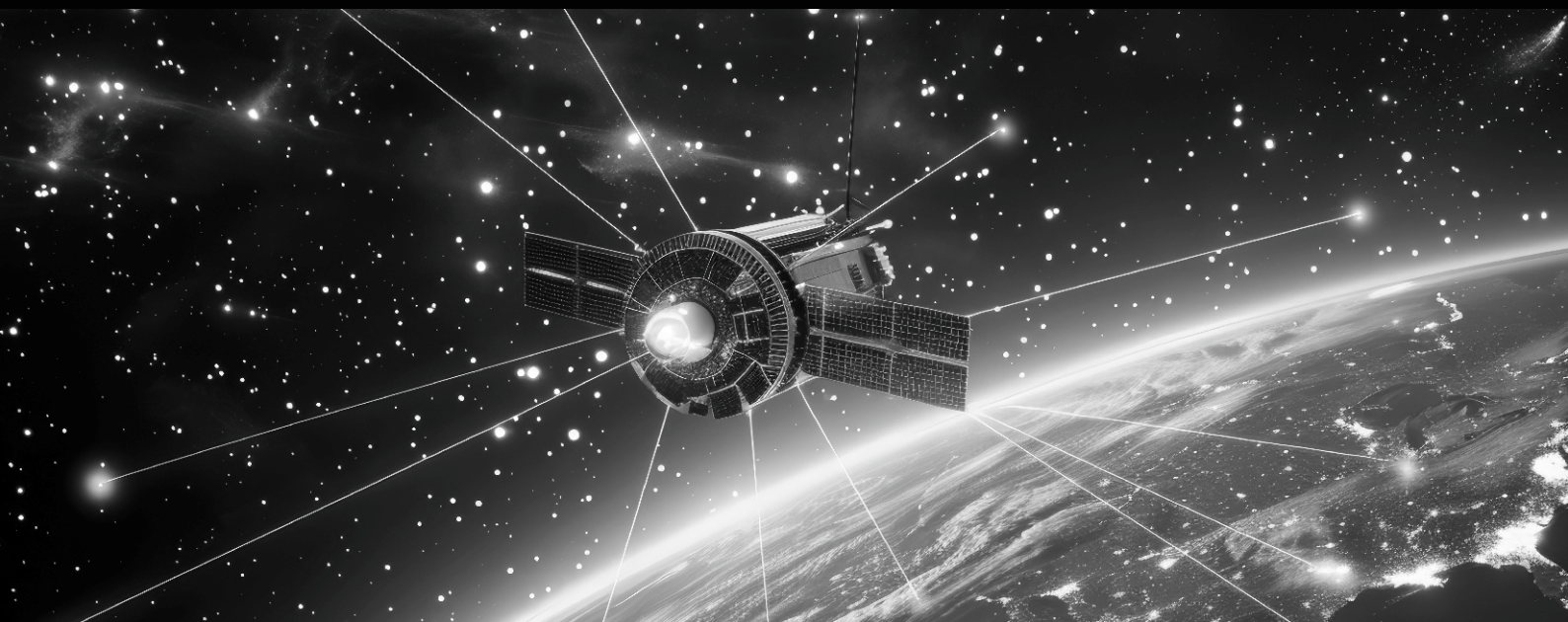
The deployment enabled the satellite broadband provider to establish a compliant & scalable lawful interception framework supporting its regulated operations in India.

Key outcomes included:

- ✔ **Established a regulatory-compliant lawful interception capability** supporting satellite broadband services under DoT and GMPCS licensing requirements.
- ✔ **Enabled secure and standards-aligned handover of interception outputs** to authorized Law Enforcement Agencies (LEAs).
- ✔ **Improved subscriber attribution accuracy**, allowing lawful monitoring across NAT-based network environments.
- ✔ Enabled **real-time traffic monitoring and performance** visibility through intuitive dashboards, providing clear insights into interception operations.
- ✔ Provided detailed, **downloadable reports** in multiple formats, with key **KPIs** such as interception success rate, packet integrity, data volume, and system performance supporting analysis and operational validation.
- ✔ **Delivered a scalable interception architecture**, capable of supporting growing traffic volumes & expanding monitoring requirements as satellite broadband services scale.

KEY HIGHLIGHTS

Problem	Solution	Impact
Regulatory requirement to implement lawful interception for satellite communication services in India	Deployment of PertSol iNterceptor lawful interception platform	Compliance readiness aligned with DoT and GMPCS licensing requirements
Need to monitor high-throughput satellite broadband traffic	Probe-based passive interception from mirrored network traffic	Reliable interception without impacting live subscriber services
Difficulty identifying subscribers behind NAT environments	UT-ID based traffic correlation and metadata integration	Accurate attribution of subscriber activity
Secure delivery of interception outputs to authorized agencies	ETSI HI2 / HI3 aligned lawful handover interfaces	Secure and standards-compliant handover to authorized Law Enforcement Agencies
Need for scalable interception infrastructure	Centralized LI architecture with PoP-level interception points	Future-ready platform supporting network growth and monitoring expansion



“Every satellite broadband provider entering India must balance regulatory compliance with the demands of high-capacity network operations. This deployment established a secure and scalable lawful interception framework, ensuring compliance readiness while supporting future service growth.”