

Global Market Insights
Insights to innovation.

VERY SMALL APERTURE TERMINAL (VSAT) MARKET

VSAT technology and its contribution to satellite connectivity in commercial applications

Very small aperture terminals (VSATs) have been around for decades now, proving themselves extremely agile in delivering connectivity on the move and in remote and rural locations for a wide range of applications. Their popularity is booming now more than ever as the technology is better understood and utilised in partnerships between companies.

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Communication has been an integral aspect of relationship building, both personal and business-related since the early days of civilization. Since the emergence of technology over the last few decades, the communication landscape has witnessed several profound changes. From the time of smoke signals to the modern connected Internet era, where technologies such as VSAT are gearing to become mainstream, evolutions in networking and communication have transformed the way people work and interact over the years.

Communication speeds and volatility are some of the most common challenges affecting myriad organizations, particularly those operating in remote or difficult-to-access

locations. To address this challenge, many companies are now turning towards satellite-based connectivity solutions for their process flow, in order to establish a more independent and agile communication network. Many solutions exist in the market for these issues, including very small aperture terminal (VSAT) networks, which deliver a plethora of benefits and applications that facilitate easier sending and receiving of information regardless of location.

VSAT technology involves the use of an antenna designed to transmit and receive information. The antenna comprises several small terminals installed in distributed locations and are connected to a central hub via satellite. VSAT dishes are known for their small size, varying from 0.75-3.8m.

VSAT technology can operate at varying shapes, sizes, and frequencies, such as Ku-band and C-band. In terms of network architecture, the global VSAT market is classified into Mesh systems, which can support a smaller number of sites from 5 to 30, Point-to-Point, or Customized Private Hub, which can support larger site numbers, and Star Network or Private Hub.

This satellite-based connectivity solution can offer myriad services supporting LAN, Internet, IP Voice, data, and video communications, in turn facilitating more robust and reliable private and public communication networks.

Given that VSAT technology is a relatively economical solution for firms that need a more versatile communication network that can connect geographically diverse sites, the application scope of the technology spans various sectors



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and areas with a common objective; to receive and send data. While the technology is used predominantly in business applications, they are also gaining traction in government and military applications in recent years.

ERP operations thrive with burgeoning VSAT penetration in the commercial sector

As more and more businesses bring remote locations into their corporate network, connectivity between partners, customers, vendors, collaborators, and others becomes a vital consideration for these organizations to achieve and sustain a competitive foothold in evolving markets. With industrialization making its way even into rural locations of late, business trends have seen a considerable shift, making connectivity a necessity. From corporate e-mail messaging to real-time e-commerce traffic and ERP (enterprise resource planning) management, the need for reliable communication technology is becoming increasingly important. Essentially, a reliable communication network is the backbone of modern business.

To that end, satellite-based connectivity solutions such as VSAT have emerged as reliable and secure mediums to facilitate connectivity between geographically diverse locations. VSAT technology offers distinct advantages, such as secure high uptime and faster deployment, even in conditions that can otherwise limit connectivity options.

VSAT technology plays an especially important role in enterprise resource management, for commercial applications such as inventory tracking, among others. In fact, the integration of very small aperture terminals for inventory tracking pioneered by Walmart is among the most notable innovations in the retail sector, which enabled the company to gain massive benefits in terms of effective, real-time management of its expansive inventory, as well as cost reduction in deliveries between warehouses and stores. Furthermore, when coupled with Walmart's inventory storage

hub system, VSAT technology facilitated more precise stocking of stores and decreased the number of times the product had to move between sites before sale.

VSAT technology - A boon for the maritime industry?

Satellite-based connectivity solutions have also triggered a considerable development in the maritime industry. Historically, the disembarking of ships from the ports used to entail a disconnection of the vessel with the global communication systems.

Traditional maritime communication methods involved a sharing of bandwidth among marine vessels to ensure proper onboard services and fulfill basic communication requirements. However, this sharing resulted in considerable data loss, thereby limiting data communication on a larger scale. Largescale data sharing is important for various operations in exploration, cruise, offshore, and ferry maritime segments, and thus requires a more advanced communication system. VSAT technology is considered a suitable solution for these situations, delivering a high bandwidth level designed to streamline voice or data transmission.

With more and more ships implementing VSAT technology, passengers and crew alike have access to faster and more reliable telephone, internet, and weather pattern monitoring services, as well as easier supply order and regulatory document filing operations, which presents significant time savings at the port, in turn enhancing productivity and business intelligence.

Maritime operators worldwide are growing increasingly aware of the value of VSATs and their role in improving the profitability and market position of their companies. To that end, many application vendors are working towards introducing advanced VSAT solutions for maritime applications, that operators can use to run more intelligent, secure, and productive operations.

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VERY SMALL APERTURE TERMINAL (VSAT) MARKET

**>\$10
BN**

Market Value
(2019)

**>\$18
BN**

Market Value
(2026)

- ➔ Ku band segment CAGR (2020-26): **>7%**
- ➔ SCPC-based terminal segment is expected to grow significantly over 2020-26

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For instance, in 2020, NBS Maritime Communications made improvements to the network coverage capabilities of SeaDirect, its flagship VSAT service, by adding new HTS (high-bandwidth satellites) and enhanced beams, in order to deliver exceptional connectivity for marine users of key sea areas and lanes for fishing and yachting applications.

Innovations and strategies – Where is VSAT technology heading?

R&D investments and an intensifying focus on improving satellite-based connectivity have urged VSAT industry players to innovate and enhance their communication systems, through various strategic initiatives over the years. For example, Gilat Satellite Networks Ltd., a noted provider of satellite network technology services and solutions, has unveiled its flagship VSAT product, Capricorn PLUS, designed to achieve half a GB of concurrent speeds.

The technology can achieve a high MF-TDMA channel rate of more than 100Mbps over a 30Msps channel, allowing for comprehensive satellite network resource usage in any service and link conditions. Capricorn PLUS VSAT possesses several lucrative benefits including built-in support for MEC (Multi-Access Edge Computing) infrastructure, which allows

for advanced edge services like IoT gateways and video caching and helps provide optimum efficiency in data-intensive operations including maritime, enterprise, and 5G backhauling.

Collaborations at global and domestic levels are also enhancing very small aperture terminals market penetration, with key entities joining hands to sustain in an increasingly complex and competitive business space.

To illustrate, integrated terrestrial and satellite network operator, Intelsat extended its four-year alliance with pan-African telecom provider Liquid Telecom, to deliver the multi-award-winning VSAT technology of Liquid Telecom via Intelsat's extensive HTS fleet, in turn ensuring a stronger, more reliable, and secure communication network to schools, communities, and businesses across 20 nations across the continent. As a result of this extended collaboration, Liquid Telecom will be able to facilitate connectivity among over 2,000 additional very small aperture terminals across Africa, to deliver continuous, high-speed, and reliable satellite-based connectivity solutions to meet the communication needs of carriers, enterprises, content firms, mobile operators, media and retail organizations in the region, especially in rural service locations.



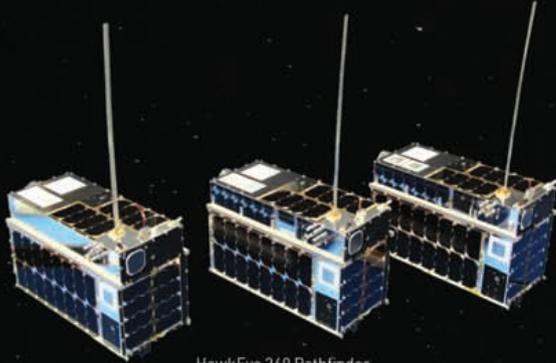
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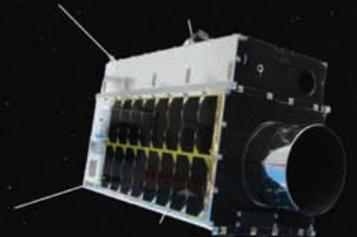
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