

VSAT

What is VSAT?

VSAT stands for Very Small Aperture Terminal. It is a small satellite dish that is capable of both receiving and sending satellite signals. VSAT systems can be designed to serve both broadcast and interactive applications whether data, voice or video, which are now being served by terrestrial lines.

VSAT offers highly reliable, flexible support of integrated multimedia communications. Compared to alternative technologies, VSAT offers customers the following features and benefits:

- Star network topology
- Full mesh connectivity
- Bandwidth-on-Demand
- Scalability of network capacity
- Modularity and open system architecture
- Economics of statistical multiplexing
- Network Management and Control
- Cost effective solution

Why VSAT?

- The dish is small, easily transportable and installation lead-time is much shorter if compared to terrestrial links. In addition, VSAT network allows rapid, low-cost network re-configuration and expansion to meet new or unexpected business requirements.
- Cost effective transmission and network operations are made possible by use of the C-band satellite frequency and frequency times division multiple access (FTDMA), Frequency division multiple access (FDMA) or Time division multiple access (TDMA) transmission techniques.
- VSAT offers a wide of protocols and features, providing extraordinary flexibility and virtually unlimited expansion capabilities. In addition, VSAT network is typically engineered to achieve a minimum of 99.7% end-to-end availability for all locations

What are the applications of VSAT?

- VSAT is an ideal satellite network that provides communications support for a wide range of applications:
- Point-of-sales transaction
 - Order-Entry Billing
 - Inventory Control
 - Financial Management
 - Data processing
 - Reservation System
 - Telemetry & Data Collection
 - News Wire Services
 - Private-Line Voice
 - Virtual Private Networks
 - Distance Education
 - High Speed Internet Access

Who should subscribe to VSAT?

VSAT presents new alternatives to the problems of conventional fixed terrestrial telecommunication beyond PSTN areas. VSAT can also help to design tailored communication business to the following sectors: -

Finance and banking

- Government Agencies
- Manufacturing
- Mining and explorations
- News agency
- Shipping and freight handling
- Travel and tourism
- Agricultural companies

What is VSAT's architecture?

VSAT can be customised and implemented with the topology of network that is best suited to the customers' requirement.

- 1) Hub type (VSAT StarNet with Star network topology)
- 2) Hubless type (VSAT DialNet and VSAT Direct with point-to-point or meshed network topology)

1) Hub type (VSAT StarNet)

- VSAT StarNet is a private network designed for data, multimedia and voice applications, providing highly reliable communications between a central hub and almost any number of geographically dispersed sites.
- It integrates both high-speed Internet access and video multicasting capabilities.
- The network is suitable for point to multi-point communication for customers having a single data center requiring connectivity to its branches in geographically dispersed locations.
- This service supports transmission bandwidth ranging from 9.6 kbps to 2 Mbps duplex.
- One of the advantages of Star topologies is that the hub can maintain effective control of the network through centralized processing.
- It is well suited for business traffic from the hub at the company headquarters and individual VSATs located at field offices, retail outlets or branches.

2) Hubless type (VSAT DialNet and VSAT Direct)

VSAT DialNet is a low cost rural telephony and Internet solutions that provides voice, fax and Internet service via satellite. It delivers toll-quality voice and IP transmission and represents the most cost-effective solutions

- VSAT Direct is a communication network that provides on-demand data, voice and fax to remote locations via satellite with a flexible multi-channel communications for public, corporate and government applications.
- The available bandwidth ranging from 9.6 kbps up to 2048 kbps duplex. Its point-to-point or mesh architecture is useful for providing inter-connectivity amongst relatively high volume VSATs utilization.
- It supports connection on demand between any pairs or terminals in the system

How high is VSAT reachability?

- VSAT is a satellite-based service covering national and regional telecommunications needs.
- The service is served from small parabolic dishes (1.8m/2.4m/3.8m) accessing to the satellite directly from the customer premises.
- That explains the capability of the service reaching out to challenging areas of the country and region. This means of communication can also serve as part of company's network diversity. Value added services that VSAT can offer is as follows:

1) Gyro Stabilized System - Practical to cater for offshore communication especially for rough and choppy sea condition. A total service package that VSAT can offer to oil and gas customer. Typical applications are data transfer, voice communication and facsimile during oil exploration or drilling activities.

2) Potential back-up service - Inmarsat as a back up to the existing VSAT service for offshore industry.

What are the benefits of VSAT to the customers?

- Across border - Wide area coverage. Satellite communication offers borderless communication within the satellite coverage area. Reachable to remote areas with digital transmission
- Rapid deployment for new sites - Rapid commissioning of new sites within an existing network
- Cost effective - The pricing is distance independent. No matter how far your location is, the pricing is still the same.
- Flexibility and efficiency - Network configuration changes such as bandwidth, interfaces, data rates, etc. can be performed remotely from the central network management system.

- Independent of terrestrial infrastructures - Worldwide deregulation of satellite communication services is fast becoming a fact. This allows worldwide implementation of truly private networks.
- Simplicity - quick deployment.

Reliability and Availability - Satellite communication gives 99.7% availability at a BER of 10^{-7} or even better.

- No local loop issues - VSAT is installed directly on the customer's site, no terrestrial backhaul costs, inflexibility with increasing bandwidth, terrestrial link availability etc.

What are the VSAT charges?

- VSAT charges are based on the following factors:

Circuit Speed / Bandwidth

Commitment/Contract period

Destination - International / Domestic

Satellite transponder Billing mode:- Monthly,
Quarterly, Yearly

- The prices rental excludes:-

One time installation charges.

Lease line charges, if any. Should the network require an extension to lease line services, the charges will be as per stated by the respective AEs.

TQ

Tatacara Penyediaan Infrastruktur Rangkaian Telekomunikasi

- Pelanggan memerlukan perkhidmatan telekomunikasi.
- Pelanggan akan berhubung dengan operator telekomunikasi.
- Operator akan menyediakan borang untuk maklumat yang berkaitan

- Operator akan memberitahu bahagian Access Network Development untuk tujuan akses talian telekomunikasi.
- Pegawai akan dihantar untuk soalselidik pelanggan.
- Pelukis Plan akan membuat lakaran plan seperti masukan kabel, bilik peralatan dan sbgnya.
- Lawatan tapak akan dijalankan oleh pegawai Access Network Development.

- Anggaran kos (logistik,transportations, BQ draf) ditentukan oleh Planning Executive.
- Penyediaan barang-barang keperluan (logistics arrangement)
- Perlaksanaan kerja (Project Management)
- Penyediaan dokumentasi (Daily activity,Site Instruction, Variation Order , Indent, BQ dan tuntutan)
- Kerja-kerja siap.
- Testing and commisionning
- Hand Over
- Talian/Rangkaian boleh digunakan oleh pelanggan.