

# V.S.A.T.

By  
M. Habibullah Pagarkar of S.E.-I.T.

In these days of increased bandwidth and better connectivity, we have seen many types of technologies that offer the above. Most of these technologies connect the user to the main system by using different types of cables. They have their inherent disadvantages, but now 'Enter VSAT'. VSAT or (Very Small Aperture Terminals) are small, software-driven earth stations that are used for the reliable transmission of data or voice via satellite with maximum speeds reaching 2 Mbps.

VSAT equipment consists of two units:

One is placed outdoors for a line-of-sight to the satellite and

The second is placed indoors to interface with the user's communications device (e.g. data terminal equipment).

The outdoor unit consists of small antenna, mount and electronics for signal reception and transmission. The indoor unit is a small desktop box that contains the receiver and transmitter boards and an interface to the user's equipment.

Many remote locations with end user terminals can be connected through VSATs to a centralized processing center or the hub. Outbound information (from the hub to the VSATs) is sent up to the communication satellite's transponder, which beams the information down for reception to the remote VSATs. The VSATs at the remote locations send information inbound (from the VSATs to the hub) via the same satellite transponder to the hub station. This arrangement where all network communication passes through the network's hub processor, is called a "STAR" Configuration. The hub station serves as the center of the star-configured network.

The VSAT Network is a STAR configuration works through the Time division Multiple Access (TDMA) method. The important operations in the transmission occur on the ground. The hub controls the entire operation of the communications network. At the hub is a network management system server, which allows the network operator to monitor and control the communications network through the integration of sophisticated hardware and software components. The VSAT Network could operate in a STAR arrangement with the satellite bandwidth being dedicated for each remote link analogous to a leased line and this arrangement is known as "Single Carrier Per Channel" (SCPC) Configuration. This type of configuration is

used in continuous streaming data applications. This type of configuration mainly used for voice transmission and used in a hubless environment for remote to remote communication.

1. A VSAT Network can be provided through a lease arrangement with fixed transmission costs regardless of distance.
2. The user retains complete control of the way information is communicated within the network. This generates flexibility, particularly where new VSAT sites need to be added, or existing sites need to be moved or removed from the network.
3. High availability and excellent transmission quality is provided by the VSAT Network. VSAT Networks also guarantee the highest performance levels (99.5%) among all communication alternatives.
4. VSAT Networks provide fast data transmission for POS applications to improve customer service.
5. Unlike ISDN and Frame Relay, a VSAT can be installed anywhere the business has a site.
6. VSAT Networks offer - a single vendor for equipment service, installation & maintenance of the entire network.
7. VSAT Networks offer superior flexibility and performance. Adding a site is quick and easy, and higher network availability levels are easy to obtain.
8. VSAT as a broadcast medium supports business objectives to improve customer service and quality. Reliable data broadcast, audio broadcast for in-site music and video broadcast for sales training are available on a single platform.
9. Prices of VSAT Networks compete favourably against terrestrial alternatives including dial-up. The costs are predictable and stable.

S. KUMAR'S is setting up kiosks all over India using this technology. Their aim is to provide cheap Internet access to the masses. Let's see how successful their strategy of linking up rural areas to the Internet is.