

BROADBAND THROUGH SATELLITE - VSAT

A growing number of leading companies, when selecting a technology platform to power their wide area networks are choosing satellite-based technology over terrestrial solutions. The following document lays out the primary reasons why satellite networks based on two-way satellite, or VSAT, technology provide a superior broadband connectivity solution for IP, Web-based and other applications.

1. Ubiquitous availability

Satellite is the only broadband wide-area network technology that is available everywhere in urban and rural areas around the world. In contrast, terrestrial technologies, such as DSL, Frame Relay and cable, are limited in their coverage area.

The bottom line – In contrast to frame, DSL and other terrestrial connectivity technologies, Satellite provides broadband connectivity anywhere it is required.

2. Network reliability

A terrestrial network has multiple potential points of failure where outages can occur. Moreover, a terrestrial network provider may or may not have the ability to fix these outages without the help of the third-party local and long-distance carriers that own and operate various portions of the network.

A VSAT network, on the other hand, has just three potential points of failure – the satellite, the hub and the remote VSAT – each of which has built-in redundancy in case of failure. Satellite outages are so rare as to be statistically irrelevant for practical network planning purposes. Typical hub availability figures usually range above 99.9985% on a year-over-year basis.

The bottom line – VSAT satellite networks provide unmatched reliability, with far fewer potential points of failure than terrestrial solutions and built-in redundancy at every level to limit service interruptions when problems do occur.

3. One point of Contact for all Network Issues

In a terrestrial environment, there are multiple companies involved in supplying a wide-area network service. In the event of an outage, what often occurs is a revolving vendor “blame game,” where each provider puts responsibility for the failure onto the other, and the customer ends up spending countless hours arguing with various companies, some of whom have no contractual responsibility to restore service in a timely manner.

With satellite, the “long haul” and “last mile” are one and the same – a virtual circuit in space between the hub, satellite and individual VSAT. Not only does this eliminate almost all possibility of failure, but it also means that satellite network customers have a single end-to-end network provider that owns, operates and controls every portion of the network, and can diagnose and fix problems immediately and unilaterally.

The bottom line – It is a single, nationwide point of contact for all network service questions. No matter where a problem occurs, or which portion of the network is affected, Problem can diagnosed and fixed in a timely manner with no involvement from third-party vendors or local telephone providers.

4. Uniform nationwide service levels

Because VSAT service is available everywhere, and because the networks feature a single, nationwide service provider for all components of the network, customers are assured of a consistent, uniform level of service at each of their remote locations – the same bandwidth, the same equipment, the same customer service, and the same field support.

With a terrestrial network, on the other hand, service levels will vary according to geographic location.

The bottom line – VSAT satellite technology provides a single, uniform network infrastructure across your entire enterprise, ensuring that each of your business locations operates with the same technology and receives the same high level of service and support.

5. Timely deployment and installation

With a terrestrial network, deployment and installation of new locations is a complicated endeavor involving multiple vendors. With a VSAT network, by contrast, installation and deployment are quick and simple. First, because VSAT technology is completely free of terrestrial infrastructure, there is no need for coordination with any other third party. An installation team can complete a site install in a matter of hours, no matter where the site is located, meaning that complete network deployment to hundreds of sites can be accomplished in a matter of weeks, rather than months.

The bottom line – Because deployment of a VSAT network is completely independent of terrestrial infrastructure, networks can be rolled out to hundreds or thousands of locations in a fraction of the time it would take to roll out a comparable terrestrial network.

6. Superior Economics

Terrestrial networks are comprised of many hundreds of miles of buried cable and building upon building of central office switches and equipment. The overhead costs to support this infrastructure – which also includes maintenance personnel, telephone poles, construction crews and equipment, and management centers across the country – are very high.

The economics of a satellite network, by contrast, are much simpler. The individual VSAT units are relatively inexpensive and can be quickly and easily swapped out by a field technician. Hub and satellite costs are shared among thousands of customer sites, so the per-site cost of equipment, maintenance and management is low – and gets lower as more sites are added to the network. Finally, unlike terrestrial services, the VSAT provider can manage all of its networks using a single national Network Management Center for increased efficiency and cost savings.

The bottom line – VSAT networks are much less costly to deploy, maintain and operate than Frame Relay and other terrestrial network technologies, and providers pass this cost savings on to their customers.

7. Multicast content distribution capability

To send a file to 1,000 recipients over a terrestrial network usually requires the sending of 1,000 separate and identical messages, each of which consumes valuable bandwidth and server resources. The reason for this is each terrestrial message takes a unique path through the Internet to a given recipient.

Satellite IP multicasting, on the other hand, alleviates this inefficiency by multicasting content, in a single broadcast message, to a virtually unlimited number of end-user locations. Satellite technology can accomplish this because each user is connected to the satellite through the same “virtual circuit” – space

The bottom line – VSAT satellite technology is the only cost-effective choice for businesses that need to deliver large amounts of data, video or audio to a large number of physically dispersed locations.

8. Site relocation and addition

One of the challenges of running a large multi-site network is the fact that remote Sites tend to relocate over time and, if enough advance notice is not provided, it can be difficult and expensive to accommodate these moves. In a terrestrial world, vendors require many days’ notice to accomplish a move.

With a VSAT satellite network, by contrast, the time frames required for moves are much more compressed. In fact, de-installation and reinstallation can occur on the same day, in most cases, if the sites are close to one another.

The bottom line – Relocating and adding network sites is significantly less complicated and less expensive with a VSAT network than with most terrestrial technologies.

9. Network capacity expansion

One of the biggest wide-area network challenges faced by many companies is the ever-expanding need for additional bandwidth to support new applications. In a terrestrial environment this is especially challenging since, if a new application is large enough, new terminal components (routers, cards, etc.) have to be ordered and increased bandwidth has to be commissioned – separately at each site, in conjunction with local third-party vendors.

With a VSAT network, on the other hand, network expansion is extremely easy and comparatively inexpensive. First, all bandwidth allocation is controlled at the hub, so increasing network capacity is as simple as increasing the amount of bandwidth that the VSAT provider allocates to the network. And, while it is possible that additional equipment may be required at the hub to support the increased capacity, this hardware can most often be installed in a matter of days. More importantly, no hardware changes or field technician visits are required at the remote sites, since VSAT equipment is designed out of the box to handle maximum bandwidth requirements.

The bottom line – VSAT satellite technology provides a uniquely convenient environment for accommodating network and bandwidth expansion.

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