Global VSAT

Seychelles VSAT Case Study

Overview

This project, completed by the Global VSAT team at C&W GOES provides VSAT terminals at six outer islands in the Seychelles supplying voice, fax and data DOMSAT services. The main hub for the network is located at Whitehill Earth Station, UK with a regional hub located at Victoria Earth Station, Seychelles. The system management is accomplished from Whitehill using a dedicated 64 KBPS circuit. The Intelsat satellite IS-IX at 62° E is used to provide the space segment.

As part of expansion, a sub-network of VSATs have been added that serve an International Commercial Bank with its regional centre of operations based in Reunion. It also has branches in four other islands in the Indian Ocean. This sub-project is still on going.

Both the above networks are successful in fulfilling complicated requirements done at a reasonable cost. Feedback from customers is positive and very encouraging. The VSAT equipment plus antennas are the property of Cable & Wireless. C&W provides maintenance spares and the space segment.

DOMSAT System

- This main VSAT system provides a domestic telecom network connecting the outer islands to the main island of Mahe'. The system serves hotel complexes, local administration and the public. Interfaces include PABXs, fax machines, data links, POS machines or payphones.
- This system utilises VSAT equipment supplied by ViaSat, Atlanta, and USA.
- The system is a DAMA (Demand Assigned Multiple Access) system in a star configuration, although mesh configuration is also possible by software modification.
- The interface between the VSAT network and the national/international switch at Victoria is 2 MBPS using the ITU-T R2 signalling system.
- The remote VSATs are equipped with voice, fax and data channel units. The channel capacity of these sites ranges from 8 minimum to 40 maximum.
- At the Victoria hub, the system provides 30X16 KBPS channels assembled in a common pool for use by all remote sites as demanded. There are additional channels for call set up, system control and monitoring.
- The 8 channel remotes use 3.8m antenna and 5W transceiver while the 40 channel remotes use 3.8m antenna and 30W transceiver.
- The switch carries out the billing function. However, the VSAT management system itself provides CDRs (Call Data Records) that can be used for billing purposes.

The Commercial Bank sub-network

- The basic services are the same as the main network.
- The network provides communications between the head office and three other branches in the Indian Ocean, with further plans for expansion.
- Each location is provided with a data circuit ranging from 128 to 256 KBPS. The customer’s equipment at each site is used to multiplex data, voice etc. onto the data pipe provided by the VSAT sub-net.