€TRAINING

Technical VSAT

22 - 26 September 2024
Online

Technical VSAT

Introduction:

This course has been designed for Technicians who are entering into the satellite communications industry from another area of electronics engineering or for VSAT installers who want to better understand the system that they are installing. It provides a basic understanding of the component parts of a VSAT system and how the terminal is installed, commissioned, and maintained.

Course Objectives:

At the end of this course, the participants will be able to:

- Define Very Small Aperture Terminals VSAT
- Understand VSAT services and features
- Understand VSAT architecture, system design, and coding schemes
- Step through VSAT propagation aspects and antennas
- Understand VSAT subsystem & launching
- Understand VSAT link design and analysis
- Explain TCP/IP, VoIP and Video applied to VSAT
- Understand VSAT-base IP communications technologies

Targeted Audience:

- Engineers
- Technicians
- Operation staff
- Anyone who needs a technical introduction to SATCOM and VSAT.

Course Outlines:
Unit 1:

- Satellite communications overview,
- Common types of satellites,
- Orbits,
- Satellite regulations,
- Frequency bands,
- System design considerations,
- VSAT system definition
- VSAT's operational description
- VSAT Footprints

Unit 2:

- VSAT networks and provided services
- Indoor and outdoor equipment used in VSATs
- VSAT Antennas
- Access methods of VSATs FDMA, TDMA, CDMA, ALOHA, MCPC, SCPC

- Fixed assignment
- Demand assignment
- Random time division multiple access

Unit 3:

- Radiofrequency link analysis applied to VSAT
- Uplink analysis
- Downlink analysis
- Propagation Effects
- Modulation types of VSATs
- Network design
- Delay analysis

Unit 4:

- VSAT dish pointing concepts
- VSAT terminals
- VSAT Earth stations,
- Hub stations
- VSAT traffic characterization
- Data communication layers in VSAT
- VSAT networking aspects protocols, throughput, channel efficiency, channel utilization
- Data communication layers in VSAT
- VSAT networking aspects

Unit 5:

- Fundamentals of VSAT Installation and operation
- The key installation steps
- Troubleshooting and maintenance
- Preventive Maintenance
- Customer‌s concerns