

# Satellite Communication Systems & IP in Modern Networks

*Rome (Italy)*

*20 - 24 January 2025*

UK Training

# PARTNER



## Satellite Communication Systems & IP in Modern Networks

Code: GC28 From: 20 - 24 January 2025 City: Rome (Italy) Fees: 4900 Pound

### Introduction

Successful as they are today, satellite systems are on the brink of a revolution. that will doubtless have a significant impact in the not-too-distant future. New and promising technology continues to appear every day. This satellite communications training course covers the most recent advancement in the field of satellite communication systems.

This course enables the participants to learn about updates in the basics of satellite basics and the parts of a satellite. and how to build a communications satellite with the latest updates. also an understanding of the major approaches, including network topologies, VSAT, and IP networking over satellite.

### Course Objectives of Satellite Communication Systems & IP in Modern Networks

- Being introduced to satellite communication systems.
- how does satellite communication work?
- Learning about satellite band frequencies.
- Identifying the requirements for an effective IP network, network ID in IP address.
- Examining the potential security risks in AAA.
- Understanding the wireless LAN and Other Access Technology .
- how to check the used IP address in the network.

### Satellite Communication Systems & IP in Modern Networks Course Outlines

#### Day 1

##### Introduction of Satellite communication systems

- Introduction of Advanced Satellite communication systems, and satellite communication basics.
- Multiple Access Techniques: FDMA, TDMA, CDMA, Random Access.
- All Digital Modulation Techniques.
- Amplitude Shift Keying ASK and Frequency Shift Keying FSK.
- Binary Phase Shift Keying BPSK and Quadrature Phase Shift Keying QPSK.
- Data Rate And Baud Rate.

#### Day 2

##### Earth Station Antenna

- Earth Station Antenna types.
- SNG Antennas.
- Fly Away Antennas.
- On the move antenna.



- Maritime Antennas.
- TVRO Antennas.
- Pointing/Tracking.

### Day 3

#### Satellite band frequencies

- Small antennas at the Ku band.
- FCC-Intelsat-ITU antenna requirements and EIRP density limitations.
- Overview of satellite band frequencies.
- The electromagnetic spectrum.
- The radio spectrum.
- Windows to space.
- L-band 1-2 GHz.
- S-band 2-4 GHz.
- C-band 4-8 GHz.
- X-band 8-12 GHz.
- Ku-band 12-18 GHz.
- Ka-band 26-40 GHz.

### Day 4

#### Modern types of modulation in the communication system, satellite communication service

- Overview of modern types of modulation in the communication system.
- Protocol Suite Overview.
- IP and Data Networks.
- IP Network Operation.

### Day 5

#### Potential security risks in AAA & wireless LAN and Other Access Technology

- IP Telephony and VoIP.
- IP in the Mobile Network.
- IPv6.
- DNS.
- DHCP.
- SS7 Functions, Architecture, and the Message Transfer Part.
- Security and AAA.
- Wireless LAN and Other Access Technologies.



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