

Satellite Communication Systems Planning & Coordination

Kigali (Rwanda)

6 - 10 January 2025

UK Traininig

PARTNER



Satellite Communication Systems Planning & Coordination

Code: GC28 From: 6 - 10 January 2025 City: Kigali (Rwanda) Fees: 4000 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 course covers the most recent advancements in satellite communication systems to develop an understanding of the major approaches, including network topologies, and VSAT. The course covers all aspects of satellite systems and networks' theory, practice, and operation.

Course Objectives of Satellite Communication Systems Planning & Coordination

- Being introduced to satellite communication systems.
- Learning about satellite band frequencies.
- Examining the potential security risks in AAA.
- Understanding the wireless LAN and Other Access Technology.

Satellite Communication Systems Planning & Coordination Course Outlines

Day 1

Introduction of Satellite communication systems

- Introduction of Advanced Satellite communication systems.
- 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 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

Satellite communications system

- Satellite communications system design.
- Basic Link Engineering.
- Satellite Systems Planning.
- Link Budgets.
- Propagation Interference and Regulation.
- Payload & Spacecraft & Earth Station Engineering.
- Use cases.
- Frequency Sharing Between GSO FSS Satellite Networks.
- Coordination of GSO FSS satellite Networks in the Unplanned Bands.
- Coordination of GSO FSS Satellite Networks in the Planned Bands.

Day 5

Orbit types & Spectrum allocations for satellite systems

- Orbit types: GEO, LEO, MEO, HEO.



- Link budgets for single links and multiple links.
- Effects of the propagation delay.
- Spectrum allocations for satellite systems.
- Key parameters: EIRP G/T, SFD, Input/Output Backoff, C/No, Eb/No.
- System Architecture of Satellite Communications Payloads.
- Evolution of communications Payload Technologies.
- Applications.
- Activity-Based Intelligence ABI.



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