Satellite Communication Systems Planning & Coordination

21 – 25 February 2027
Cairo (Egypt)

UK Traininig
PARTNER



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Ref: 3284_128123 **Date:** 21 – 25 February 2027 **Location:** Cairo (Egypt) **Fees:** 4900 GBP

Why This Course

Satellite communications play a vital role in global connectivity, supporting applications ranging from broadband access to critical infrastructure and defense systems. The Satellite Communication Systems Planning & Coordination Program is an intensive 1-week technical course designed to provide participants with a comprehensive understanding of satellite technologies, network design principles, and regulatory coordination processes.

This program combines theoretical knowledge with hands-on exercises and real-world case studies, enabling participants to design, implement, and manage efficient satellite communication networks in compliance with international standards and best practices. It is ideal for engineers, network planners, regulators, and professionals involved in satellite systems development and operations.

What You'll Learn and Practice

By completing this program, participants will:

- Understand the principles, architecture, and components of satellite communication systems.
- Master planning and design methodologies for satellite networks.
- Gain in-depth knowledge of regulatory frameworks and frequency coordination procedures.
- Develop practical skills in performance optimization, QoS management, and troubleshooting.
- Explore emerging technologies shaping the future of satellite communications.

The Program Flow

Day 1: Introduction to Satellite Communication Systems

- Fundamentals of satellite communication and its applications.
- Space segment overview: satellite orbits, payloads, and transponders.
- Ground segment design: earth stations, antennas, and RF equipment.
- Frequency bands, link budgets, modulation, and multiple access techniques.

Day 2: Satellite Network Planning and Design

- Network topology and architecture design principles.
- Capacity planning and traffic engineering methodologies.
- Coverage mapping, footprint analysis, and optimization.
- Link budget calculations, fade margins, and reliability planning.



Day 3: Regulatory Framework and Coordination Procedures

- ITU Radio Regulations and frequency allocation processes.
- Satellite coordination and interference analysis techniques.
- Licensing, documentation, and national regulatory compliance.
- Role of international and regional regulatory bodies.

Day 4: Implementation and Performance Optimization

- Earth station installation, alignment, and commissioning procedures.
- Network monitoring and management systems.
- Quality of Service QoS parameters and optimization strategies.
- Troubleshooting, fault diagnosis, and network maintenance best practices.

Day 5: Emerging Technologies and Future Trends

- High-throughput satellites HTS and Low Earth Orbit LEO constellations.
- Software-defined satellites and network virtualization.
- Integration with 5G, IoT, and hybrid terrestrial-satellite networks.
- Case studies and practical exercises on system design and coordination.

Individual Impact

- Gain the ability to design, plan, and optimize satellite communication networks.
- Build confidence in navigating regulatory and coordination procedures.
- Develop practical technical skills in link budgeting, system analysis, and troubleshooting.
- Strengthen your expertise in next-generation satellite technologies.

Organizational Impact

- Improve efficiency and compliance in satellite system planning and operations.
- Enhance technical capability in regulatory coordination and interference management.
- Increase network reliability and performance through optimized design strategies.
- Build capacity to adopt and integrate new satellite technologies for future growth.

Training Methodology

The program integrates theoretical depth with applied learning through:

- Real-world case studies and simulation-based exercises.
- Interactive workshops on network planning and regulatory coordination.
- Hands-on exercises in link budget analysis and system troubleshooting.
- Expert-led discussions on current challenges and industry trends.



Beyond the Course

Upon completion, participants will be equipped to design, implement, and manage satellite communication systems with technical precision and regulatory compliance.

Graduates of this program will emerge as competent satellite communication professionals — ready to lead planning, coordination, and innovation initiatives in the rapidly advancing satellite industry.

