



ITU-ITSO Training Course on Satellite Communications and Radio Regulations Procedures for Arab and Africa regions

TRAINING COURSE OUTLINE

Course Title	ITU-ITSO Training Course on Satellite Communications and Radio Regulations Procedures for Arab and Africa regions
Modality	Online instructor-led
Dates	07 November – 16 December 2022
Duration	6 weeks
Registration Deadline	1 November 2022
Training fees	Free
Description	Under close cooperation between the ITSO and the ITU, the online basic course program “Satellite Communications and Radio Regulations Procedures” has been developed and put in place with the primary objective of raising awareness amongst individuals, organizations and institutions on policies, regulations, licensing frameworks and technical aspects associated with the provision of satellite communications services. This program is also an essential component of ITSO Capacity Building Initiative, which has been supported by member states and various partnerships and is intended to offer to member states an access to basic capabilities and necessary tools to support the continuous development and effective use of satellite communications services.
Course code	22OI500096MUL-E-D

1. LEARNING OBJECTIVES

The main objective of the training is to provide a general initial understanding of the main concepts of Satellite Communications, the regulatory aspects, satellite orbit resources, among several others.

2. LEARNING OUTCOMES

Upon completion of this training course, learners will gain an understanding of the key aspects of:

- Basics of satellite communications
- Radio Regulations related to satellite orbit and spectrum resources
- Policy and regulatory guidelines for satellite services
- Network planning and link budget analysis
- Earth station and VSAT system
- Radio Regulations related to earth station coordination and registration.

3. TARGET POPULATION

This program is a standard training course with three main areas of concentration: POLICY, REGULATION and TECHNICAL CONCEPTS that address to regulators, operators and technicians in the satellite communications sector. It covers a wide range of issues relating to satellite communications and regulatory aspects, including the role of regional and international satellite communications organizations.



Policy Makers and Regulators

- BASIC OF SATELLITE COMMUNICATIONS
- POLICY ISSUES & REGULATORY FACTORS
- PROCUREMENT & COST CONSIDERATIONS



Satellite Coordination & Registration Procedures

- ORBIT SPECTRUM ALLOCATION
- COORDINATION & NOTIFICATION PROCEDURES
- BSS & FSS PLANS & LIST
- ELECTRONIC SUBMISSIONS & APPLICATIONS OF ITU-BR SOFTWARE PACKAGES



Technical & Regulatory

- BASICS OF SATELLITE COMMUNICATIONS
- POLICY & REGULATORY GUIDELINES FOR SATELLITE SERVICES
- NETWORK PLANNING & LINK BUDGET ANALYSIS

4. ENTRY REQUIREMENTS

This instructor-led online training course is addressed to regulators, policy makers and operators in the ICTs sector. It covers a wide range of issues relating to satellite communications and regulatory issues, including the role of regional and international satellite communications organizations. Participants should have the basic understanding of telecommunications and spectrum management.

5. TUTOR/INSTRUCTORS

NAME OF TUTOR(S)/INSTRUCTOR(S)	CONTACT DETAILS
Mr. Edwards Kasule Musisi (English)	kasule@datafundi.co.ug
Mr. Alexandre Vallet (English)	alexandre.vallet@itu.int

6. TRAINING COURSE CONTENTS

Zoom sessions are planned as follows:

- Module 1 – Thursday 10 November, 11h am (Geneva time), Tutor: Edward Kasule Musisi
- Module 2 – Thursday 17 November, 11h am (Geneva time), Tutors: Edward Kasule Musisi and Alexandre Vallet
- Module 3 – Thursday 24 November, 11h am (Geneva time), Tutor: Alexandre Vallet
- Module 4 – Thursday 1 December, 11h am (Geneva time), Tutor: Edward Kasule Musisi
- Module 5 – Thursday 8 December, 11h am (Geneva time), Tutor: Edward Kasule Musisi
- Module 6 – Thursday 15 December, 11h am (Geneva time), Tutor: Alexandre Vallet

7. TRAINING COURSE SCHEDULE

WEEK 1	MODULE 1 – COMMUNICATION SATELLITES <ol style="list-style-type: none">i. Birth of Satellites and Satellite Launchesii. Orbitsiii. Radio Wavesiv. Signal, Noise and Spectrumv. Modulationvi. Propagationvii. Space and ground segment<ol style="list-style-type: none">✓ Transponder✓ Antenna and Polarization✓ Level, Gain and Loss✓ Footprint✓ Earth Stations in Motion✓ Satellite linksviii. Evolving Technologies and Technology Trends
WEEK 2	MODULE 2 – POLICY, INSTITUTIONAL AND REGULATORY FRAMEWORK <ol style="list-style-type: none">i. UN System and ITUii. International Legal Framework: the Radio Regulations and World Radiocommunication Conferences (WRC)iii. The Role of National Administrators and Regional Coordinating Agenciesiv. ITSO and other Specialized Agenciesv. Satellite Operators and Satellite Industry
WEEK 3	MODULE 3 – ORBIT AND SPECTRUM RESOURCES <ol style="list-style-type: none">i. Satellite Services and Frequency Bandsii. Access to Satellite Orbit/Spectrum Resources:<ul style="list-style-type: none">• Coordination and Notification Mechanisms• BSS and FSS Plansiii. Harmful Interference Casesiv. Introduction to BR Space Software
WEEK 4	MODULE 4 – SATELLITE COMMUNICATION NETWORKS <ol style="list-style-type: none">i. Network Topologiesii. Access Schemesiii. C-Band vs Ku-Bandiv. Internet Traffic over Satellite Networksv. Coding and Modulationvi. Introduction to Network Planning and Link Budget Analysis

WEEK 5	<p>MODULE 5 - EARTH STATION AND VSAT SYSTEM</p> <ul style="list-style-type: none"> i. ANTENNA <ul style="list-style-type: none"> ✓ Types ✓ Parameters ii. UPLINK <ul style="list-style-type: none"> ✓ Modulation ✓ Up-converters ✓ Transmitters ✓ Inter Facilities Link iii. DOWNLINK <ul style="list-style-type: none"> ✓ LNA/LNB ✓ Down-converters ✓ Inter Facilities Link ✓ Demodulation
WEEK 6	<p>MODULE 6 – EARTH STATION COORDINATION AND REGISTRATION</p> <ul style="list-style-type: none"> i. Purpose and Tools ii. Demonstration of Earth Station Coordination and Registration iii. Practical Exercise using Offline Earth Station Coordination Software (GIBC)

8. METHODOLOGY (Didactic approach)

The course on “Satellite Communications and Radio Regulations Procedures” is an instructor-led online training course with a six-week length. It uses various educational methods and tools to meet the needs of learners in online education.

The course is structured around six Modules. Each learner should watch the recorded video for each of these Modules. The reading materials accompany the videos and can help learners to follow all topics covered.

After watching the video, each learner needs to read the accompanying documents (such as PowerPoint presentations, articles, texts or cases) and answer questions on a number of topics under the Module. These questions will also serve as guidance for discussion.

Conference call discussions are offered, during which the tutor will review the topics covered under the Module and answer learners’ questions.

At the end of the Module, the learner needs to access the quiz regarding this Module, which consists of a set of multiple-choice questions, and the learner needs to reach above 70% of correct answers. Upon successful completion of the course and the feedback form, participants will be able to download certificates of achievement directly from the platform.

9. EVALUATION AND GRADING

The assessment of the participants shall be based on the time spent on the training and the following parameters:

Evaluation Parameter	Weightage
Exam	60%
Attendance	10%
Participation (group work, quizzes)	30%
Total	100%

Important: A passing mark of 60% is required for obtaining a completion certificate.

10. TRAINING COURSE COORDINATION

Africa Region Coordinator Mr. Emmanuel Niyikora Programme Officer ITU Area Office for West Africa E-mail: emmanuel.niyikora@itu.int	Arab Region Coordinator Ahmed El Raghy Senior Advisor ITU Arab Regional Office Email: ahmed.elraghy@itu.int
--	--

Program Contact Information

ITSO contact information: Ms Diane Bastin Senior Advisor International Telecommunications Satellite Organization (ITSO) Email: dbastin@itso.int	ITU contact information: ITU Academy platform contact point: Email: hcbmail@itu.int
--	---