



Spectrum Management Training Programme

Online Training on EM1-1 Spectrum Monitoring 2 – 27 November 2020

TRAINING OUTLINE

COURSE DESCRIPTION

Title	Spectrum Monitoring
Method of delivery	Online
Objectives	The aim of this course is for students to be able to clearly describing the role, functions and basic techniques of spectrum monitoring, and have an understanding of the purpose and capabilities of different types of spectrum monitoring equipment. Furthermore, the student will have opportunity to demonstrate their ability to define monitoring tasks (check lists) and analyse their results (results list), as well as individually planning essential spectrum monitoring operations and measurements.
Dates	2 – 27 November 2020
Duration	4 weeks
Registration deadline	1 November 2020
Training fees	USD 200
Course code	200I26224MUL-E
Course Domains	<ol style="list-style-type: none">1. ITU and its organs2. Regulatory Frameworks3. History of Radio communication4. Computer Aided Spectrum Management
Reference	<ol style="list-style-type: none">1. ITU Handbook on Spectrum Monitoring2. ITU Handbook on National Spectrum Management3. ITU Radio Regulations

LEARNING OUTCOMES

- Participants will acquire skills to utilize automated spectrum skills for management of radio frequency spectrum.
- Participants will learn how to post radio frequencies in NFTAs and MIFR,
- They will learn how to conduct Authorization and licensing using automated SMS4DC tools.
- Participants will acquire knowledge on use of relational database management system and GIS for Spectrum management.
- They will acquire understanding of key elements and functional blocks of an automated spectrum management and monitoring system.
- They will acquire skills and abilities to compare and select a suitable spectrum management and monitoring system based on the needs of administrations.
- They will acquire skills to implement spectrum management systems in their respective administrations.

TARGET POPULATION

This Program is targeted at engineers and officers tasked with planning, engineering, monitoring and operation of radio systems in developing and leased developed countries. The Participants are drawn from national regulatory authorities, fixed and mobile operators, broadcasters, service providers, government, military, security agencies, Aeronautical, maritime, meteorological, PMR Radio operators, Science and academia.

TUTORS/INSTRUCTORS

NAME OF TUTOR(S)/INSTRUCTOR(S)	CONTACT DETAILS
Eng. Jared Baraza	nyakwarodenge@gmail.com Tel: +254719596054
Mr. Jonathan Mwakijele	Jmwakijele@afralti.org Tel: +254718860897

EVALUATION

Participants should score an overall mark of 60%. The evaluation is based on:

- Participation in all 4 Forums (10%)
- Quiz week 1 (10%)
- Quiz week 2 (10%)
- Quiz week 3 (10%)
- Quiz week 4 (10%)
- Written assignment (50%)

TRAINING SCHEDULE AND CONTENTS / AGENDA

Agenda (for online training)

Week	Activity	Exercises and Interactions
Week 1 Role of monitoring in the spectrum management process. ITU's role and structure, with focus on ITU-R, Study Groups and SG1 and its Working Party 1C in particular	Read Week 1 Materials and references Participate in live lecture and discussion Make comments on the forum Take a short quiz	Forum Topic 1: Why is Spectrum Monitoring important in your country and what roles does it play in overall frequency usage by operators and service providers? Exercise on the Monitoring Software Live Lecture and discussion: Wednesday, 1500 Hours-1700 Hours
Week 2 Radio Regulations, with focus on various articles related to monitoring	Read Week 2 Materials and references Participate in live lecture and discussion Make comments on the forum Take a short quiz	Forum Topic 2: Why are Radio Regulations important and how are they used by your monitoring team to ensure compliance with all the clauses of the Regulations by Operators in your country? Exercise on the Monitoring Software Live Lecture and discussion: Wednesday, 1500 Hours-1700 Hours
Week 3 Typical measurements conducted by monitoring, such as: <ul style="list-style-type: none"> • Occupancy measurements • Bandwidth measurements • Field strength measurements • Modulation measurements • Frequency measurements • Etc. 	Read Week 3 Materials and references Participate in live lecture and discussion Make comments on the forum Take a short quiz	Forum Topic 3: Which measurements are carried out by your Spectrum Monitoring team and why are they important in terms of QOS and Spectrum efficiency? Exercise on the Spectrum Monitoring Software Live lecture and discussion: Wednesday, 1500 Hours-1700 Hours
Week 4 ITU-R Recommendations and Reports related to monitoring Principles of various types of monitoring equipment (manuals): <ul style="list-style-type: none"> • Antennas • Receivers • Direction finders • Spectrum analysers • Signal analyzers, etc. 	Read Week 4 Materials and references Participate in live lecture and discussion Make comments on the forum Take a short quiz	Forum Topic 4: How are Radio Regulations used in monitoring in your country. How are they used to reduce cases of harmful interference? Exercise on the Spectrum Monitoring Software Live Lecture and discussion: Wednesday, 1500 Hours-1700 Hours

METHODOLOGY

- Instructor-Led online learning

TRAINING COORDINATION

Training Coordinator: Jonathan Mwakijele Head of Management, Policy and Regulatory Unit African Advanced Level Telecommunications Institute (AFRALTI) Tel : +254 718 860 897 Email: Jmwakijele@afralti.org	ITU Coordinator: Emmanuel Niyikora Programme Officer ITU Area Office for West Africa, Dakar Tel : +250 788312939 Email: emmanuel.niyikora@itu.int
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REGISTRATION AND PAYMENT

Registration on ITU Academy Portal

Registration and payment should be made online at the ITU Academy portal.

To be able to register for the course you **MUST** first create an account in the ITU Academy portal at the following address:

<https://academy.itu.int/index.php/user/register>.

Course registration

When you have an existing account or created a new account, you can register for the course online at the following link: <https://academy.itu.int/training-courses/full-catalogue/sntp-em11-spectrum-monitoring>

You can also register by finding your desired course in our training catalogue <https://academy.itu.int/index.php/training-courses/full-catalogue>.

Payment

1. On-line payment

A training fee of USD 200 per participant is applied for this training. Payment should be made via the online system using the link mentioned above for training registration <https://academy.itu.int/training-courses/full-catalogue/sntp-em11-spectrum-monitoring>

2. Payment by bank transfer

Where it is not possible to make payment via the online system, select the option for offline payment to generate an invoice using the same link as above. Download the invoice to make a bank transfer to the ITU bank account shown below. Then send the proof of payment/copy of bank transfer slip and the invoice copy to Hcbmail@itu.int and copy the course coordinator. **All bank transaction fees must be borne by the payer.**

3. Group payment

Should you wish to pay for more than one participant using bank transfer and need one invoice for all of them, create an account as **Institutional Contact**. **Institutional Contacts** are users that represent an organization. Any student can request to be an institutional contact or to belong to any existing organization.

To do this, head to your profile page by clicking on the **“My account”** button in the user menu. At the bottom of this page you should see two buttons:

- a. If you want to **become an institutional contact**, click on the **“Apply to be an Institutional Contact”** button. This will redirect you to a small form that will ask for the organization name. After you fill the name of the

organization you want to represent, click on “**continue**” and a request will be created. An ITU Academy manager will manually review this request and accept or deny it accordingly.

- b. If you want to **belong to an existing organization**, click on the “**Request to belong to an Institutional Contact**” button. This will redirect you to a small form that will ask you to select the organization you want to join from an organization list. After you select the correct organization, click on “**continue**”, a request will then be created. The Institutional Contact that represents that organization will manually accept or deny your request to join the organization.

Failure to submit the above documents may result in the applicant not being registered for the training.

ITU BANK ACCOUNT DETAILS:

Name and Address of Bank:	UBS SA Case postal 2600 CH 1211 Geneva 2 Switzerland
Beneficiary:	Union Internationale des Télécommunications
Account number:	240-C8108252.2 (USD)
Swift:	UBSWCHZH80A
IBAN	CH54 0024 0240 C810 8252 2
Amount:	USD 200
Payment Reference:	200I26224MUL-E - P.40635.1.01