ITU Centres of Excellence Network for the Arab Region

National Telecommunication Institute (NTI

Face-to-Face Training on

Spectrum Engineering Techniques
Cairo, Egypt, 10-12 November 2015

TRAINING OUTLINE

COURSE DESCRIPTION

Title	**Spectrum Engineering Techniques**
Method of delivery	Face-to-face
Objectives	- Understanding technical aspects of signal identification, and noise and interference consequences on digital communications. - Identify and assess noise and interference measurement and identification methods for the sake of efficient spectrum utilization - Grasp the Limits of unwanted emissions, and assess methods to quantify and reduce the Out of Band emission. - Identify Spectrum utilization efficiency measures, and investigate the spectrum engineering practices and analysis tools of spectrum management.
Dates	**10-12 November 2015**
Duration	3 Days
Registration deadline	**1st November 2015**
Training fees	300 USD per participant
Course code	**15WS14321ARB-E**

LEARNING OUTCOMES

By the end of the course, participants will be able to:

(1) Understand technical issues in identifying the digital signal;

(2) Identify, evaluate, and select the appropriate noise measurements and interference identification;

(3) Recognize, and assess the potential of spectrum planning and assignment strategies based on interference limited scenarios.

(4) Grasp the limits for unwanted emissions, and assess methods to quantify the Out of Band emission

(5) Investigates the spectrum engineering practices and analysis tools of spectrum management.

(6) Identify, evaluate, and select the appropriate methods for spectrum sharing.

(7) Discuss different approaches to spectrum occupancy measurements, possible issues related to them and their solutions.

(8) Recognize, and assess methods for calculating spectrum utilization

(9) Understand safety aspects of spectrum sharing with radio safety services.

TARGET POPULATION

Professional from ICT Sectors , Telecom Operators Project leaders , Program Managers ,Project Managers, Functional Managers, Engineers ,Private Business Owners , Team Leaders, Strategic and business Planners, and Project Team Members.

TUTORS/INSTRUCTORS

NAME OF TUTOR(S)/INSTRUCTOR(S)	CONTACT DETAILS
Dr. Ashraf A. Eltholth	**ashraf.elthoth@nti.sci.eg** **Tele +201153029443**

EVALUATION

I. Pre Test.

II. Post Test.

TRAINING SCHEDULE AND CONTENTS / AGENDA

Date for 1st day	Time; Start time	Topics/Activities
10/11/2015	9:00 - 9:30	Registration
	09:30 - 11:00	- Pre Test - Spectrum Management Startups - Spectrum Engineering Concepts
	11:15 - 13:15	- Technical Identification Of Digital Signals - Vector Signal and Spectrum Analysis
	13:45 - 15:00	Radio Noise Measurements
Date for 2nd day	**Time; Start time**	**Topics/Activities**
11/11/2015	9:00 - 11:00	INTERFERENCE
	11:15 - 13:15	Unwanted Emissions
	13:45 - 15:00	Spectrum engineering practices
Date for 3rd day	**Time; Start time**	**Topics/Activities**
12/11/2015	9:00 - 11:00	Spectrum occupancy measurements
	11:15 - 13:15	- Measures of spectrum utilization - Aspects of distress and safety matters
	13:45 - 15:00	- Closing Project - Evaluation & Discussion

METHODOLOGY

Instructor-led presentations, group exercises and assignments.

Participants will get a copy of the Material on CD.

TRAINING COORDINATION

NTI Training coordinator:	ITU coordinator:
Ms. Sara Ahmed Attia Head of Marketing & Business Development Unit Tele: +20 2 35342447 Mobile: +201003995764 Fax: +20 2 35342428 Email: saahmed_attia@nti.sci.eg sahmed_attia@yahoo.com	**Eng. Mustafa Al Mahdi** Associate Programme Officer Arab Regional Office-ITU Tel :+20 2 353 71777 Mobile :+201141177573 Fax :+20 2 353 71888 Email : mustafa-ahmed.al-mahdi@itu.int

REGISTRATION AND PAYMENT

Registration

Please note that to be able to register for the course you MUST create an account in the ITU Academy at the

following address:

https://academy.itu.int/index.php?option=com_hikashop&view=user&layout=form&Itemid=559&lang=en

When you have an account or created a new account you can register for the course online by following the link below:

https://academy.itu.int/index.php?searchword=Spectrum%20Engineering&searchphrase=all&Itemid=378&option=com_search&lang=en

Also you can register yourself by following the steps below:

       a) Go to ITU Academy website home page
       b) On the upper hand corner, you will find search option
       c) Type the name of the course in the space provided and search
       d) When the course appears, select "book this course" and follow easy instructions to register.

Payment

1. A training fee of USD 300 per participant is applied for this training. **It is encouraged to make payment via the online system using the link mentioned above for registration at** https://academy.itu.int/index.php?option=com_hikashop&view=user&layout=form&Itemid=559&lang=en.

2. Where it is not possible to make payment via the online system, the following alternative may be used:
    -   Wire transfer via ITU BANK ACCOUNT DETAILS below:

Name and Address of Bank:	UBS SA Case postale 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 300
Payment Reference:	P.40592.1.05 CoE-ARB 14321

3. If due to national regulations, there are restrictions that do not allow for payment to be made using options 1 & 2 above, please contact the ITU coordinator for further assistance.