



Training Course Outline

ITU AND STATE RADIO MONITORING CENTER, CHINA

Title	Spectrum Management and Spectrum Engineering Techniques
Modality	Online instructor led
Dates	25 July - 7 August 2022
Duration	2 weeks
Registration deadline	22 July 2022
Training fees	Free
Description	This course covers the core functions of spectrum management and spectrum engineering techniques and is mainly targeted towards the staff of National Spectrum Management agencies. This course covers the core functions of spectrum engineering including emerging radiocommunication technologies, spectrum efficiency, coordination procedure, frequency management regulation and so on.
Code	22OI27833ASP-E

1.LEARNING OBJECTIVES

To develop an understanding of the spectrum management and improve spectrum engineering techniques.

2. LEARNING OUTCOMES

The training course will provide an empowering learning environment through a combination of course content and discussion boards focused on sharing information with the participants.

Upon completion of this course, participants will be able to:

- Be Interested in non-GSO satellite systems
- Be familiar with compatibility study
- Understand technical spectrum efficiency
- Understanding of cross-border coordination, bilateral coordination of terrestrial services and earth stations.

3.TARGET POPULATION



This training is designed to address mid to senior level management from policy makers, regulators, corporate executives and managers responsible for Spectrum Management and Spectrum engineering techniques.

4.ENTRY REQUIREMENTS

None

5.TUTORS/INSTRUCTORS

Name of tutor(s)/instructor(s)	Contact details
Ms. REN Hong	SRMC
Ms. WU Xi	SRMC
Mr. CHANG Liang	SRMC Spectrum Institute
Ms. DING Xianhua	SRMC
Ms. SUN Qian	CAST
Mr. YANG Wenhan	GALAXY SPACE

6.TRAINING COURSE CONTENTS

The course mainly focus on Spectrum Management and Spectrum engineering techniques, such as sharing study, technical spectrum efficiency, bilateral coordination, Earth-station coordination areas, ITU frequency management regulation, LEO satellite constellation and so on.

7.TRAINING COURSE SCHEDULE

Topic	Speaker	Interactive Session
LEO satellite constellation : Technology developments and interference analysis <i>The presentation will introduce the technology characteristics and developments of LEO satellite constellation. And introduce the methods to assess interference involving non-GSO satellite systems.</i>	GALAXY SPACE (BEIJING) TECHNOLOGY Mr. YANG Wenhan	26 th July 2022
Coordination for Stations of Terrestrial service and earth stations <i>This course aims at helping us to coordinate between stations of terrestrial service or between stations of terrestrial service and earth stations in the</i>	SRMC Ms. REN Hong	27 th July 2022



<i>border areas of different countries. The main issues include the basic information from ITU for coordination or regional agreement , coordination method, calculation method, propagation models ,etc.</i>		
Brief Introduction on Terrestrial Frequency Assignments Notification <i>The course covers brief introduction on relevant provisions of the Radio Regulations with respect to the terrestrial services frequency assignment registration, and relevant procedures and softwares. Helping the attendees to build basic views on terrestrial frequency assignments notification, and grasp relevant basic operation skills.</i>	SRMC Ms. WU Xi	28 th July 2022
Quiz #1		29 th -31 st July 2022
Application of ray tracing technology in the field of radio management <i>The presentation will introduce a High-precision geolocation technique based on reflection line tracking technology, which is able to resolve the problem of accurate geolocation in urban environment. Based on the accurate three-dimension modeling of building, the technique is able to locate position of emitter by receiving the field strength data from distributed sensors. Experiments in traditional environment have verified the feasibility of this technique.</i>	SRMC Spectrum Institute (Beijing OET Spectrum Institute) Mr. CHANG Liang	2 nd August 2022
Spectrum Requirement Estimation <i>The presentation will introduce the methodology for calculation of spectrum requirements. The following three cases are given to illustrate the estimation process: PPDR(Public Protection and Disaster Relief), the terrestrial and satellite component of IMT.</i>	SRMC Ms. DING Xianhua	3 rd August 2022
Telecommunication Satellite and ITU frequency management regulation <i>The presentation will introduce the framework and application scenario of telecommunication satellite, as well as the capability of DFH series satellite platform of China. The presentation will also give a general introduction of frequency characteristics, international frequency management mechanism, and frequency and orbit resources submission and coordination procedure</i>	China Academy of Space Technology (CAST) Ms. SUN Qian	4 th August 2022
Quiz #2		5 th -7 th August 2022

8.METHODOLOGY (Didactic approach)

This course will be delivered using instructor-led online learning. The course is delivered using power-point slides posted on the course page and selected reference materials that the participants have to study each week, participate in scheduled activities and undertake self-assessments. Students will reinforce their understanding of the topics studied by drawing on their specific environments and are



encouraged to consult with experienced colleagues who are working on a relevant topic. The following methods will be used for this course.

The training methodology will be as follows:

- Each module will be studied and discussed over the established time period;
- Training materials will be made available through online learning access page;
- Moderated Interactive discussion forums (60 mins with 15 mins for summary of relevant content and 45 mins for Q&A) will be organized where students are highly encouraged to participate and interact with instructors and other students;
- Quiz tests will be assigned at the end of a given training week;

All announcements for all events (materials, quizzes and forums) will be given prior to the event by the training tutor.

9.EVALUATION AND GRADING

Below are the evaluation schemes:

Quiz #1: 30%

Quiz #2: 20%

Participation: 20%

Assignment: 30%

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10.TRAINING COURSE COORDINATION

Course coordinator: Ms. LI Jianxin Tel: +86 10 6800 9073	ITU coordinator: Name: Mr. Sean Doral Email address: sean.doral@itu.int
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Fax: +86 10 6800 9073 E-mail: lijianxin@srrc.org.cn	
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