



ITU Centres of Excellence Network for Asia and the Pacific

State Radio Monitoring Center - China

FACE-TO-FACE Training Course on

SPECTRUM MANAGEMENT AND IMT-2020 RADIO TECHNOLOGY APPLICATION

Harbin, Heilongjiang Province, China (Peoples Republic of)

17 – 21 June 2019

COURSE OUTLINE

COURSE DESCRIPTION

Title	Spectrum Management and IMT-2020 Radio Technology Application
Objectives	<ul style="list-style-type: none">• Understand the process and new approaches to address the challenges to national Spectrum management and monitoring.• Learn the practical issues related to:<ul style="list-style-type: none">○ Inter-communicating things - IoTs○ Bilateral coordination of terrestrial service and earth stations○ 5G frequency planning research and Industry Development updates○ Smart sustainable cities and its KPIs○ Radio Regulation with respect to railway radio communications○ Technology and Application of Terrestrial Digital TV broadcasting
Dates	17 – 21 June 2019
Duration	5 days
Registration deadline	15 May 2019
Training fees	0
Course code	19WS24308ASP-E
Enrolment Key	24308SMIMT

LEARNING OUTCOMES

This course covers the core functions of spectrum management and monitoring and is mainly targeted towards the staff of National Spectrum Management agencies. Inclusive of the detailed case studies from China, the course consists of detailed sessions on topics IoTs, Smart cities, Radio-communication monitoring technologies, Digital Broadcasting etc. amongst others.

The training course also provides an empowering learning environment through a combination of lectures and visits focused on sharing information with the participants of modern technical tools to facilitate national radio frequency management and monitoring in an efficient and effective way.

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 monitoring.

TUTORS/INSTRUCTORS

Please see the detailed agenda for information while further details would be available from training webpage at <https://academy.itu.int/index.php/training-courses/full-catalogue/spectrum-management-and-imt-2020-radio-technology-application>

EVALUATION

The overall assessment is made up of four components. Two are based on the participants' performance through administered tests and examinations, and the other two are based on the trainer's evaluation of the participant.

1. **Participation** – The trainer allocates marks based on the participants' level of involvement in group work and spontaneous quizzes during the course of the training. This component provides 35% towards the learner's overall score.
2. **Attendance** - The trainer awards marks based on the rate at which the participant shows up in class based on the requirements of the course. This component provides 15% towards the overall score.
3. **Exam** - The exam is the final assessment of knowledge gained during the training. For this reason, it contributes the highest percentage of 50% to the overall score.

Scoring Items			Weighted Scores			
Participation (Group work and Quiz)	Attendance	Exam	Participation + Quiz (35%)	Attendance (15%)	Final Exam (50%)	Total Score

The overall pass mark to be attained by participant for certification is set at 60%.

TRAINING SCHEDULE AND CONTENTS / AGENDA

Day 1- Opening and Introduction to Radio Management Issues 17 June, Monday (9:30 AM – 17:00 PM)		Speaker
9:30-10:00	Opening Remark	
10:00-10:45	Group Photo and Café-Break	
10:45-12:00	Radio Spectrum administration in China	BRR - MIIT
12:00-14:00	LUNCH	
14:00-15:15	Inter-communicating things - IoTs <i>The session will give an Overview of the Ecosystem of IoTs and highlight the different technical solutions available to develop these networks. Standardization activities of technical solution will also be part of the extended session</i>	ITU – RO-ASP
15:15-15:45	Café-Break	
15:45-17:00	Bilateral coordination of terrestrial service and earth stations <i>The session will give an overview of basic knowledge of international frequency coordination for terrestrial service and earth station, including international regulation, coordination scene, propagation model, calculation method etc.</i>	SRMC
18:00-20:00	Welcome Dinner	
Day 2- 5G Frequency planning and Management of radio stations 18 June, Tuesday (9:00 AM – 17:00 PM)		
9:00-10:15	5G frequency planning research in 3-6GHz frequency band. A case study from China. <i>The session will give an overview of 5G spectrum, especially introduce 5G frequency planning progress, frequency usage and interference coordination in 3-6GHz band in China</i>	SRMC
10:15-10:30	Café-Break	
10:30-11:15	Smart sustainable cities and its KPIs <i>The session will discuss the smart cities concept and highlight U4SSC KPIs of measuring the smart sustainable cities</i>	ITU – RO-ASP
11:15-12:00	Quiz	
12:00-14:00	LUNCH	
14:00-15:15	Development of Global 5G Spectrum Planning Research in Millimeter Wave	SRMC

	<i>The session will give an Overview of 5G millimeter wave band usage scenario, global frequency plan, spectrum demand, and will focus on the progress of studies and methods to satisfy the WRC-19 Agenda Item 1.13.</i>	
15:15-15:45	Café-Break	
15:45-17:00	Introduction on Practices of Radio Station Management in China <i>The session discusses on the international and national radio station management framework, and shares the knowledge and experiences in China on radio station management from the perspectives of laws and regulations, administrative management, and data management.</i>	SRMC
Day 3- Radio Technology and Application 19 June, Wednesday (9:00 AM – 17:00 PM)		
9:00-10:15	5G Industry Development Update <i>The session will introduce 5G industry development status. 1. 5G key performance and technology. 2. 5G major applications in consumer and industry market. 3. 5G ecosystem and deployment updates. 4. Advice for 5G commercialization</i>	Huawei Technologies Co., Ltd.
10:15-10:30	Café-Break	
10:30-11:15	Radio Regulation with respect to railway radio communications <i>The session will give an overview of railway radio communications technologies in terms of applications and services, and highlight the technology development trend. Radio Regulation with respect to railway radio communications will also be part of this session.</i>	China Academy of Railway Sciences (CARS)
12:00-14:00	Lunch	
14:00-15:15	Technology and Application of Terrestrial Digital TV broadcasting(Part I) <i>The session will introduce the concept of digital TV, give an overview of the existing international standard, i.e., ITU standards and highlight the core technologies utilized as well as the performance improvement associated with that.</i>	Tsinghua University
15:15-15:45	Café-Break	
15:45-17:00	Technology and Application of Terrestrial Digital TV broadcasting(Part II) <i>The session will cover of migration from analog to DTV, introduce the DTV applications, and give an overview of the second generation international digital TV standard with the focus on its capability to handle the UHD TV.</i>	Tsinghua University

Day 4 –Field visit 20 June, Thursday (9:00 AM – 17:00 PM)		
9:00-12:00	Visit local ICT Facility	
12:00-14:00	Lunch	
14:00-17:00	Visit Harbin Radio Monitoring Center (Field visit)	
Day 5- Examination, Group discussion and Closing Session 21 June, Friday (8:30 AM – 15:30 PM)		
08:30-10:00	Examination	
10:00-12:30	Group discussion and know-how exchange (Group Presentations)	
12:30-14:30	Lunch	
14:30-15:30	Closing Session, Distribution of Class Evaluation	

METHODOLOGY

The training will include Instructor-led presentations, case studies, group exercises, study visits (as per the program above), and evaluations.

All training materials would be provided to the participants at least in soft form.

COURSE COORDINATION

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REGISTRATION

Please visit event website to register for the course at this link:

<https://academy.itu.int/index.php/training-courses/full-catalogue/spectrum-management-and-imt-2020-radio-technology-application>

Make sure you copy and paste the enrolment key which you can find on page 1 of this training outline as well as on the [advertisement](#) of the course.