



Training course outline

ITU and China Academy of Information and Communications Technology

Title	Conformity and Interoperability relating to 5G
Modality	Online instructor led
Dates	11-24 April, 2022 (tentative) with extended time for Quiz and Assignment)
Duration	2 weeks
Registration deadline	10 April 2022
Training fees	Free
Description	This course will help the participants to know about the general development of 5G industry globally and in China, the key technologies and standards progress of 5G, testing technologies of 5G base station, massive MIMO and RF-OTA, testing of 5G network performance, etc. Let the participants build the knowledge of 5G basically in C&I area.
Code	22OI27820ASP-E

1.LEARNING OBJECTIVES

- to introduce the general development of 5G industry globally and in China;
- to introduce the key technologies and standards progress of 5G
- to introduce the testing technologies of 5G base station, massive MIMO and RF-OTA, 5G network performance

2. LEARNING OUTCOMES

The course is expected to achieve the following outcomes:

- Understand the basic C&I framework, the development and implementation of conformity assessment programmes;
- Understand the standardization and key technologies progress in ITU and other standard organizations;
- 5G testing technologies and protocols, including base station, massive MIMO and RF-OTA, network performance, etc.



3.TARGET POPULATION

This training is targeted at managers, engineers and employees from regulators, government organisations, telecommunication companies and academia, who are interested in understanding, implementation and regulation of Conformity and Interoperability programmes relating to 5G. Other institutions and individuals that are interested in building their capacity related to Conformity and Interoperability are also welcome to participate.

4.ENTRY REQUIREMENTS

The participants are expected to have basic knowledge of ICT.

5.TUTORS/INSTRUCTORS

Experts from CAICT, operators, equipment providers and other partners.

6.TRAINING COURSE CONTENTS

The training course will cover the following contents:

1. ITU C&I Programme; Regulatory framework of Certification & Network Access in China
2. 5G Industry overview and 5G-enabled Applications
 - Socioeconomic Impact of 5G
 - 5G 2C Enable Better Infotainment Experience
 - 5G 2H Accelerate Home Connection
 - 5G 2B Promote Industry Revolution
3. IMT spectrum progress in ITU-R
 - ITU-R overview
 - Frequency arrangement for IMT systems
4. The testing technology of 5G base station
 - Technical details about 5G base stations
 - Key standards about 5G base station testing
 - Major principles and methods for 5G base station testing
5. Challenges on 5G Massive MIMO and RF OTA test
 - Massive MIMO Technical characteristics;
 - MIMO Theory
 - OTA test site
 - RF OTA test standards, such as transmitter test and receiver test
6. 5G network performance test Based on user experience
 - General idea about network performance tests
 - Why and how to test based on user experience
 - Basic methods and tools used in the test
 - Some information and experience from practice



7. TRAINING COURSE SCHEDULE

Week / Session	Topics	Exercises and interactions
Week 1	<ul style="list-style-type: none">• 5G market overview and Application• 5G Standards in ITU-R• 5G testing, including base station, Massive MiMo, etc	The participants are required to review and learn the course materials by themselves. The tutors will respond any questions from participants through Forum on ITU platform.
Week 2	<ul style="list-style-type: none">• 5G market overview and Application• 5G Standards in ITU-R• 5G testing, including base station, Massive MiMo, etc	Tutors will be online to respond any questions raised by participants via Zoom meeting. Quiz and Assignment will be provided to evaluate the learning effects of participants.

8. METHODOLOGY (Didactic approach)

Course Materials: The relevant course material will be made available on the website, which will include presentations, practical cases introduction, etc.

Online Discussion Forum: Participants are expected to participate actively in discussion forum on selected topics throughout the week.

Chat Session: Online chat session with the Tutor will take place in the second week on Wednesday from 14:00 – 15:00 Hrs. Beijing Time (GMT+8). All participants are expected to join the chat session to interact with tutors.

Quiz: 1 mandatory online quizz will be held at the end of each week of the course

Assignment: There will be a mandatory assignment for the course

9. EVALUATION AND GRADING

Besides the tests and their assignment score, participants will be evaluated according to their substantive posts on the discussion forum and other course activities, reflecting both the quantity and quality of time spent on the course. The evaluation details and criteria for certificates is as follows.

Quiz:	60%
Individual Assignment	30%
Discussion Forum	10%
Total Evaluation:	100%

IMPORTANT: A PASSING MARK OF 60% IS REQUIRED FOR OBTAINING A COMPLETION CERTIFICATE.



10. TRAINING COURSE COORDINATION

Course coordinator: Name: WANG Ying Email address: wangying@caict.ac.cn	ITU coordinator: Name: Sean Sharidz Doral Email address: sean.doral@itu.int
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