



Training course outline

Title	Conformity and interoperability on test reports analysis and regulatory aspect of electromagnetic compatibility testing (EMC)
Modality	Online instructor-led
Dates	21-25 November 2022
Duration	1 week
Registration deadline	15 November 2022
Training fees	Free
Description	<p>The Conformance and Interoperability workshops has proven to enhance capacity of participants from Member States in Africa to effectively test conformance and interoperability of equipment used in networks and digital infrastructure and to establish labs for testing including establishing policy and regulatory frameworks. Capacity acquired through this training will enable facilitation of safe usage of ICT products and services anywhere in the region, regardless of who is the manufacturer or service provider, it is therefore crucial that products and services be developed in accordance with relevant international standards, regulations and other specifications, and that their compliance be tested</p> <p>As widespread Conformity and interoperability of telecommunication/ICT equipment and systems allow increased market opportunities as well as the reliability and integration of world trade which can be achieved through Programs, policies and decisions. This course covers understanding of Radio Frequency (RF) test reports of various telecommunication equipment, Theory of Specific Absorption Rate (SAR) and test report analysis, Electromagnetic Interference (EMI) and Electromagnetic Susceptibility (EMS) test reports. It will cover effects of Radio Frequency (RF), Specific Absorption Rate (SAR), including Electromagnetic Interference (EMI) and Electromagnetic Susceptibility (EMS).it will look at types of equipment used for testing and arrangements of reports. It will also touch on regulatory aspect of Electromagnetic Compatibility (EMC) testing.</p>
Code	22OI500121AFR-E-D



1. LEARNING OBJECTIVES

- To enhance capacity in reviewing C&I related test reports and analyzing them.
- To enhance capacity focusing on international and regional Electromagnetic Compatibility (EMC) testing.
- To understand and help meet regulatory requirements to improve product performance and reduce the risk of costly non-compliance.

2. LEARNING OUTCOMES

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

- To understand Radio Frequency (RF) test reports of various telecommunication equipment, Theory of Specific Absorption Rate (SAR) and test report analysis, Electromagnetic Interference (EMI) and Electromagnetic Susceptibility (EMS) test reports.
- To understand the effects of Radio Frequency (RF), Specific Absorption Rate (SAR), including Electromagnetic Interference (EMI) and Electromagnetic Susceptibility (EMS).
- To know types of equipment used for testing and arrangements of reports.
- To know components of regulatory aspect of Electromagnetic Compatibility (EMC) testing
- To establish regulatory framework of Electromagnetic Compatibility (EMC) testing

3. TARGET POPULATION

The Training course is open to experts conducting activities on conformity and Interoperability from Ministries in charge of ICTs and the Regulatory Bodies from the 44 Sub-Sahara African Countries.

Target audience for this course are the Ministry and Regulators staff in the ICTs Industry working with ICTs standards including approving and authorizing ICTs equipment and devices in Sub-Sahara Africa. These are technical staff from entities like;

- Ministry of ICTs
- Regulatory Authority
- Operators
- Service Providers
- Manufacturers
- Vendors
- ICT equipment Dealers, etc

4. ENTRY REQUIREMENTS

Candidates will be selected based on their duties and background knowledge of Conformance and Interoperability issues. Confirmation of admittance to the training course will be sent directly to the selected candidates. Candidates will be expected to give a brief of C&I status in their countries and also to participate in group projects and presentation of C&I related issues.

5. TUTORS/INSTRUCTORS

NAME OF TUTOR(S)/INSTRUCTOR(S)	CONTACT DETAILS
Mr. Isaac Boateng	isaac.boateng@nca.org.gh +233244841239
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6. TRAINING COURSE CONTENTS

The topics covered in this course are:

1. ITU C&I programme implementation updates
2. Countries' experiences on test reports analysis
3. Test Report production and analysis
4. Regulatory aspects of Electromagnetic Compatibility(EMC) testing
5. Written test
6. Brainstorming, Q&A and Evaluation and closure

The training will be followed by sessions consisting of:

- Written test at the end of the training
- The train will be use tools for brainstorming, Q&A, and evaluation, and closure

7. TRAINING COURSE SCHEDULE

21 st November, 2022 GMT	
12:00 – 13:25hrs	<p><i>Welcoming remarks</i> <i>Welcoming speech ITU</i> <i>Welcoming speech NCA</i></p> <ul style="list-style-type: none"> • Director General • Regional Director for Africa <p>Session 1 ITU Updates</p> <p>Objective: To promote updates on Conformity and interoperability Thematic Priority and Theory of Change including review of challenges and gaps observed in C&I framework establishment.</p> <p>- The ITU activities on C&I with focus on Pillars 3 & 4 of the C&I programme and</p>



	<p>CITP updates</p> <ul style="list-style-type: none"> - Challenges and gaps observed in C&I Frameworks establishment <p>ITU - Mr. Keith Mainwarring</p>
	<i>Break</i>
13:35 – 15:00hrs	<p>Session 2: Country experience on test reports production and analysis</p> <p>Objective: to share experiences, opportunities and challenges in interpreting various types of C&I reports</p> <ul style="list-style-type: none"> • Country A • Country B • Country C • Country D • Country E • Country F • Country G, etc
22nd November 2022	
12: 00 - 13:25hrs	<p>Session 3: Test Report production and Analysis</p> <p>Objective: Enhance capacity in reviewing C&I related test reports and interpreting reports.</p> <ul style="list-style-type: none"> i. Radio Frequency (RF) test reports of various telecoms equipment ii. Theory on Specific Absorption Rate (SAR) and test report interpretation iii. Electromagnetic Interference (EMI) and Electromagnetic Susceptibility (EMS) test reports <ul style="list-style-type: none"> a) Effects of Radio Frequency, Specific Absorption Rate and Electromagnet Susceptibility b) Types of equipment used for testing c) Arrangements of reports <p>NCA</p>
13: 25 - 13:35hrs	<i>Break</i>
13:35 - 15:00hrs	<p>Session 4: Test Report production and analysis (cont'd)</p> <p>Objective: Enhance capacity in reviewing related test reports and interpreting reports</p> <ul style="list-style-type: none"> i. Radio Frequency (RF) test reports of various telecoms equipment



	<ul style="list-style-type: none"> ii. Theory on Specific Absorption Rate (SAR) and test report interpretation iii. Electromagnetic Interference (EMI) and Electromagnetic Susceptibility (EMS) test report <ul style="list-style-type: none"> a) Effects of Radio Frequency, Specific Absorption Rate and Electromagnet Susceptibility b) Types of equipment used for testing c) Arrangements of reports <p>NCA</p>
23rd November 2022	
12:00 - 13:25hrs	<p>Session 5: Test Report production and analysis (cont'd)</p> <p>Objective: Enhance capacity in reviewing related test reports and interpreting reports</p> <ul style="list-style-type: none"> i. Theory on Specific Absorption Rate (SAR) and test report interpretation ii. Theory on Specific Absorption Rate (SAR) and test report interpretation iii. Electromagnetic Interference (EMI) and Electromagnetic Susceptibility (EMS) test report <ul style="list-style-type: none"> a) Effects of Radio Frequency, Specific Absorption Rate and Electromagnet Susceptibility b) Types of equipment used for testing c) Arrangements of reports <p>NCA</p>
13: 25 - 13:35hrs	<i>Break</i>
13:35 - 15:00hrs	<p>Session 6: Test Report production and analysis (cont'd)</p> <p>Objective: Enhance capacity in reviewing related test reports and interpreting reports</p> <ul style="list-style-type: none"> i. Radio Frequency (RF) test reports of various telecoms equipment ii. Theory on Specific Absorption Rate (SAR) and test report interpretation iii. Electromagnetic Interference (EMI) and Electromagnetic Susceptibility (EMS) test report <ul style="list-style-type: none"> a) Effects of Radio Frequency, Specific Absorption Rate and Electromagnet Susceptibility b) Types of equipment used for testing



	c) Arrangements of reports NCA
24th November 2022	
12:00 - 13:25hrs	<p>Session 7: Regulatory aspects of Electromagnetic Compatibility (EMC) testing</p> <p>Objective: To enhance capacity focusing on international issues related to EMC including to understand and help meet regulatory requirements to improve product performance and reduce the risk of costly non-compliance.</p> <ul style="list-style-type: none">- Introduction to EMC regulatory requirements- EMC definition- EMC standards (international and Regional)- Effects of EMC- Equipment for EMC testing- Approach for EMC testing- Roadmap to establish a procedure for EMC testing- Administrative Procedures of EMC Initial implementation roadmap- Coordination and harmonization of C&I regime with other national Regulatory agencies- Certification and Self-declaration processes- Market Surveillance and Enforcement- Consultation process and procedure- Fees and payment NCA
13: 25 - 13:35hrs	Break
13: 35 - 15:00hrs	<p>Session 8: Regulatory aspects of Electromagnetic Compatibility (EMC) testing</p> <p>Objective: To enhance capacity focusing on international issues related to EMC including to understand and help meet regulatory requirements improve product performance and reduce the risk of costly non-compliance</p> <ul style="list-style-type: none">- Introduction to EMC regulatory requirements- EMC definition- EMC standards (international and Regional)- Effects of EMC- Equipment for EMC testing- Approach for EMC testing- Roadmap to establish a procedure for EMC testing- Administrative Procedures of EMC Initial implementation roadmap- Coordination and harmonization of C&I regime with other national Regulatory agencies- Certification and Self-declaration processes- Market Surveillance and Enforcement- Consultation process and procedure- Fees and payment



	NCA
25th November 2021	
12:00 - 13:25hrs	Session 9: Written test Objective: evaluate understanding and knowledge transfer ITU/NCA
13: 25 - 13:35hrs	Break
13: 35 - 15:00hrs	Session 10: Brainstorming, Q&A and Evaluation and closure Objective: evaluation of the course from participants including discussion focusing on pressing issues and topics for the next training ITU/NCA

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, 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

- Self-study of PPTs and reference materials
- Instructor led presentations made through Zoom or MS Teams
- In class exercises
- Interactive chat sessions and forum discussions

Preparation: Each participant should:

- Read of the PPT slides uploaded in the course page for the day
- Attend scheduled online sessions

9.EVALUATION AND GRADING

Students performance in this course will be determined using a combination of grades for the forum, participation in chats/zoom sessions, self-assessment quizzes and the final exam. Where:

- Forum posts for 30 hours will be awarded 10 points in total
- Assignments 15 points in total, 1 Assignment per day worth 1.5 points
- Participation in the Chat or Zoom sessions will be awarded 15 points in total per 3 hours per day
- Written test will be assessed by 50% of correct answers from a set of 25 multiple choice questions worth 2 points per question, out of a total of 50 points.

The forum will account for 15% of the total score, assignments 15% of total score the chats/zoom sessions 15% of the total score, attendance 5% of total score, and the final exam 50%.

Total score higher than 70% is required to obtain the ITU certificate.



10. TRAINING COURSE COORDINATION

Course coordinator:	ITU coordinator:
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