

CONFORMITY AND INTEROPERABILITY ASSESSMENT ON A REGIONAL BASIS:

Conformity and Interoperability Assessment on a Regional Basis: Collaboration amongst Regional and Sub-regional Organizations for establishing common C&I Programs and Mutual Recognition Agreements

East Africa Community (EAC)
(Burundi, Kenya, Rwanda, Tanzania, and Uganda)

Conformance and Interoperability (C&I) Project

DRAFT FINAL REPORT

Rev0

Study Conducted by ITU Regional Office and ITU HQs.

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TABLE OF CONTENTS

1.0	INTRODUCTION	6
1.1	Background	6
1.2	Authority for Action on C&I	6
1.3	Methodology.....	7
1.4	Structure of the Report.....	7
2.0	EAST AFRICAN COMMUNITY.....	7
2.1	Formation, Vision and Mission	7
2.2	Relevance of C&I in EAC.....	8
2.3	Objectives of EAC Articles 98 and 99 of EAC.....	8
2.4	Some Ongoing Projects under Articles 98 and 99	9
3.0	EAST AFRICA COMMUNICATIONS ORGANISATION	9
3.1	Mandate and Achievements	10
3.2	Expectations about C&I Project and Suggestions	10
4.0	BURUNDI.....	11
4.1	Introduction	11
4.2	Overview of the C&I situation in Burundi	11
4.3	C&I Requirements in Burundi	12
5.0	KENYA.....	12
5.1	Introduction	12
5.2	Overview of the C&I situation in Kenya	12
5.3	Specific Conformance and Interoperability Implementation in Kenya	13
5.4	C&I Requirements in Kenya	15
6.0	RWANDA.....	16
6.1	Introduction	16
6.2	C&I Problem in Rwanda	16
6.3	Some Suggestions to move the C&I project forward.....	17
7.1	Introduction	17
7.2	C&I Problem in Tanzania.....	18
8.0	UGANDA.....	19

8.1	Introduction	19
8.2	Conformance and Interoperability Situation in Uganda.....	19
8.3	Some Ways to Deal with Counterfeits	22
8.4	Leapfrog the C&I Process.....	22
9.0	KEY FINDINGS.....	22
10.0	NEXT STEPS - WAYFORWARD.....	23
11.0	RECOMMENDATIONS.....	23
11.1	Key Recommendations	23
11.2	Roadmap for Key Recommendations	25
12.0	COLLABORATIONS ON THE C&I ASSESSMENT IN EAC/EACO	26
	APPENDIX II - BURUNDI CONFORMANCE AND INTEROPERABILITY QUESTIONNAIRE RESPONSE.....	30
	APPENDIX III - KENYA CONFORMANCE AND INTEROPERABILITY QUESTIONNAIRE RESPONSE	38
	APPENDIX IV - RWANDA CONFORMANCE AND INTEROPERABILITY QUESTIONNAIRE RESPONSE.....	46
	APPENDIX V – TANZANIA CONFORMANCE AND INTEROPERABILITY QUESTIONNAIRE RESPONSE	54
	APPENDIX VI – UGANDA CONFORMANCE AND INTEROPERABILITY QUESTIONNAIRE RESPONSE	66
	APPENDIX VII – EAST AFRICAN COMMUNITY CONFORMANCE AND INTEROPERABILITY QUESTIONNAIRE RESPONSE	72
	APPENDIX VIII - DRAFT TERMS OF REFERENCES (TOR) FOR EAC C&I EXPERT COMMITTEE	76

LIST OF ABBREVIATIONS

ARSO	-	Africa Regional Standardization Organisation
ADBIM	-	Analogue-to-Digital Broadcasting Migration
C&I	-	Conformance and Interoperability
CEIR	-	Central Equipment Identification Register
EAC	-	East African Community
EACO	-	East Africa Communications Organisation
EU	-	European Union
FCC	-	Federal Communication Commission
GSMA	-	GSM Association
IAF	-	International Accreditation Forum (IAF)
ICTs	-	Information and Communications Technologies
ILAC	-	International Laboratory Accreditation Cooperation
IMEI	-	International Mobile Equipment Identity
ITU	-	International Telecommunication Union
KENAS	-	Kenya National Accreditation Service
MRA	-	Mutual Recognition Arrangement
PVoC	-	Pre-verification of conformity
QoS	-	Quality of Service
REC	-	Regional Economic community
RURA	-	Rwanda Utilities Regulatory Authority

- SADC - Southern Africa Development Community
- SI - Systeme Internationale (International System)
- UCC - Uganda Communication Commission
- WRC - World Radio Conference
- WTSA - World Telecom Standardization Assembly

1.0 INTRODUCTION

In this section, a background, objectives and methodology that was used to develop this report are presented

1.1 Background

In the framework of collaboration among regional and sub-regional organizations for establishing a common Conformity and Interoperability (C&I) regime and mutual recognition agreements, the International Telecommunication Union (ITU) is carrying out conformity and interoperability assessment on a regional basis. The current study/assessment covers the five East African Community (EAC) countries comprising of Burundi, Kenya, Rwanda, Tanzania and Uganda.

As part of the execution of the project, missions to Nairobi (Africa Telecommunication Union [ATU], Africa Regional Standardization Organisation [ARSO], Kenya Bureau of Standards [KEBS]), missions to Kigali - Rwanda (Rwanda Utilities Regulatory Authority [RURA], East African Communications Organisation [EACO]); missions to Kampala-Uganda(UCC), missions to Arusha (EAC Secretariat) and Dar es salaam (TCRA) in Tanzania; and missions to Bujumbura –Burundi (ARCT) were undertaken by the two ITU consultants for C&I assessment.

Objectives of the Missions

The objectives of the missions were:-

- (1) To sensitize decision makers on the C&I project
- (2) To enhance the quality of study and give the consultants more practical appreciation of the current environment for C&I regime or programs in the EAC region, and also
- (3) To facilitate successful completion of questionnaires leading to a higher chance of the overall success of this project.

1.2 Authority for Action on C&I

The collaboration between ITU and the EAC on the C&I assessment project is mandated by ITU Resolutions on C&I, namely:

- Resolution 76: ITU World Telecommunication Standardization Assembly (WTSA-12)
- Resolution 47: ITU World Telecommunication Development Conference (WTDC-10)
- Resolution 177: ITU Plenipotentiary Conference (PP-10)
- Resolution 62: Radiocommunication Assembly 2012
- ITU Council Decisions: (2009, 2010, 2011, 2012)

These resolutions can be traced to the work of ITU in the Africa region since the ITU regional development forum (Kigali, May 2007) and previous recommendation on development of Information and Communications Technologies (ICTs) in developing countries, specifically in Africa.

1.3 Methodology

The following approach was adopted in the C&I assessment Study in the EAC:

- Preparation of data collection instruments (conformance and interoperability questionnaires): one questionnaire for the EAC secretariat and the other for the NRAs in EAC
- Establishing high level contacts with the Regional Economic community, REC (EAC) and Member administrations through the ITU Regional office for Africa;
- Dispatch of conformance and interoperability Questionnaires
- Missions to EAC ITU member administrations and making C&I Assessment Study presentations to stakeholders;
- Face to face meetings with officials in member administrations to get their readiness and support for the C&I project;
- Presentation of C&I Project to the stakeholders (the NRAs) followed by discussions; whereby a draft of the complete C&I questionnaire was also discussed and clarifications made where necessary.
- Working with stakeholders to complete the questionnaire, seeking clarifications and writing the C&I assessment study report.

1.4 Structure of the Report

After the introductory section, the rest of the report comprises of the results of the missions to the EAC countries and the suggestions and recommendations that were made for each country. Further, Key findings, way forward/ next steps and overall recommendations for further actions on creation of a Common EAC C&I Regime are presented. The collaborations that were realized during the study are presented in **Appendix I**. Further, while summaries of the C&I status in the countries are presented in the report, the details of the C&I situation are presented in the **Appendix II (Burundi), Appendix III (Kenya), Appendix IV (Rwanda), Appendix V (Tanzania) and Appendix VI (Uganda); the information from EAC is appended as Appendix VII**. Lastly, the proposed Draft Terms of Reference for the proposed EAC C&I Expert Committee (**Appendix VIII**) are also provided.

2.0 EAST AFRICAN COMMUNITY

2.1 Formation, Vision and Mission

The East Africa Community (EAC) is the regional intergovernmental organization of the Republics of Burundi, Kenya, Rwanda, Tanzania and Uganda, with its headquarters in Arusha, Tanzania.

The treaty for its establishment was signed on 30 November 1999 and entered into force on 7 July 2000, following its ratification by the three original partner states – Kenya, Tanzania and Uganda. The Republics of Rwanda and Burundi acceded to the EAC treaty on 18 June 2007 and became full members of the community with effect from 1 July, 2007.

Mission and Vision

The vision of EAC is a prosperous, competitive, secure, stable and politically united East Africa;

Its Mission is to widen and deepen Economic, Political, Social and Cultural Integration, in order to improve the quality of life of the East Africa Community (population of more than 130 million – 2010 records) through increased competitiveness, value added production, trade and investments.

2.2 Relevance of C&I in EAC

Cooperation in the Communications sector is mandated by Articles 98 and 99 of the treaty for the Establishment of the East Africa Community (EAC).

Under the provisions of the Treaty, Partner States undertake to cooperate in the establishment and operation of communications infrastructure, the development and deployment of ICT applications and services and promotion of postal services.

The principles of Conformance and Interoperability (C&I) as contained in the ITU Resolution 76, (Johannesburg 2008) can and will certainly, facilitate the attainment of the objectives of the above mentioned articles of EAC.

2.3 Objectives of EAC Articles 98 and 99 of EAC

The following are the four major strategic objectives of projects and programs of the sector –

1. Harmonization of ICT policies, laws and regulations among the EAC Partner States. An integral component of this strategic objective is the coordination and enhancement of associated institutions.
2. Promote the establishment of communications infrastructure and services such as communications networks, e-government and e-commerce services and geo-spatial information systems.
3. Standardization¹ of technologies and services to allow internetworking and interoperability.

¹ Like most of the developing economies EAC are currently recipients in terms of gadgets/equipment as all are manufactured outside the region and under International licences/patents and standards. In this regard, most of the standards are either set by manufacturers or other International standards bodies. Therefore, EACO ensures

4. Communications markets – Investment strategies, competition management, quality of service and consumer welfare.

2.4 Some Ongoing Projects under Articles 98 and 99

- a) **East African Community Broadband ICT Infrastructure Network (EAC-BIN):** The aim of this project is to establish and operate a cross-border broadband infrastructure network within EAC
- b) EAC Legal Framework for Cyber Laws
- c) Analogue-to-Digital Migration (ADBIM)
- c) ICT Policy and Harmonization Framework

d) East Africa Communications Organization – EACO

EACO is a regional ICT organization under a Public Private Partnership (PPP) arrangement that brings together national ICT regulators, telecommunications, broadcasting, and postal operators/service providers, academia and other associated stakeholders in the EAC Partner States. Its objective is to strengthen and promote cooperation among the EAC Partner States in the development telecommunications, postal and broadcasting services in East Africa.

e) Harmonized EAC Roaming Charges:

Roaming within the community began way back in the late 1990s, when mobile networks were first introduced in the Partner States, thanks to spectacular growth in mobile communications services, roaming is estimated to have been growing ever since. In February 2015, the EAC summit directed the council to expedite implementation of the framework for Harmonized EAC Roaming Charges for mobile communication services by July 2015.²

The Heads of States also directed the removal of surcharges for international telecommunications traffic originating and terminating within EAC by July 2015³.

3.0 EAST AFRICA COMMUNICATIONS ORGANISATION

harmonized Policies and/or regulatory frameworks on these standards without carrying out standardization activity.

² The progress on this matter at TCM Protocol had better be referred here which would capture the IMR picture because it is presently being coordinated by the EAC Secretariat with EACO

³ This statement is true for the Northern Corridor Partner States;

3.1 Mandate and Achievements

EACO coordinates⁴ ICT matters across EAC and so far, some of the achievements of EACO are:

- EAC framework on regional roaming – tariff and charges
- Established working groups which follow ITU activities in respect of Policy and Regulatory harmonization in the EAC region, Spectrum Frequency & World Radio Conference (WRC) proposals which are being strengthened to follow up on standardization, conformance and interoperability issues, to mention but a few.
- Guidelines for broadband development and connectivity and Infrastructure sharing in the EAC region.
- Established the EAIXP project and a Member of the AXIS project steering committee
- Observer in EAC and an ITU Sector member

In order to enhance their functions EACO needs:

- ICT data base for EAC region
- Capacity building on C&I
- C&I infrastructure

3.2 Expectations about C&I Project and Suggestions

Similarly, EACO's expectations of C&I project are as follows:

- Capacity building by ITU because there is limited capacity on C&I
- Roadmap of the project
- Action plans and roles of various stakeholders - EAC, EACO, Regulators, operators
- How the project will be financed
- Identification of the project champion i.e., the organization that should drive the project – EAC (see also the Southern Africa Development Community [SADC] experience)

Suggestions/ Proposals to increase the ownership of the C&I project

As a way of increasing the ownership of the C&I project it is proposed that the political establishment such as engagement of the permanent secretaries in charge of ICT in each of the Partner States in order for them to be sensitized adequately about the project.⁵

⁴ EACO is established by Agreement/Constitution that is just commitment by members and presently not mandatory hence non-enforceable but operating in "Good faith" i.e. may not wholly deal with the matter but play a participatory role.

⁵ This should however be done by bringing the PSs with their NRAs on C&I with relevant Standards officers/engineers as C&I will need the decision makers as well as clear understanding of the implementers.

4.0 BURUNDI

4.1 Introduction

The 'Agence de Regulation et de Controle des Telecommunications' (ARCT) is the statutory body charged with the proper regulation, control and monitoring of the Telecommunications / ICT industry as well as Broadcasting in Burundi. (Postal services are not yet regulated, but they will soon be monitoring and controlled by ARCT).

It is a fairly young regulatory body and as such lacks a lot of the structures and capacities of a well-established regulatory body in Africa, consequently the ARCT of Burundi will stand to gain a lot from the benefits of a C&I program especially in the area of capacity building of its staff and entering into potential MRAs on a regional level to achieve its Equipment Type Approval mandates without necessarily investing a fortune in manpower and systems.

4.2 Overview of the C&I situation in Burundi

The following is an overview of the C&I situation in Burundi:

Conformance assessment- Conformance assessment scheme exists in Burundi but does not include self-declaration of conformity, however the use of proxies such as Institute of Electrical and Electronics Engineers (IEEE), Federal Communication Commission (FCC), European Telecommunications Standardization institute (ETSI), etc. is very well utilized by ARCT.

The ARCT stands to benefit immensely from the C&I program if it were fully adopted and implemented in the region.

Legislation - There is legislation and regulation framework, which establishes requirements for ICT products and services to be legally imported and deployed in the marketplace for ICTs and ICT services. The legal and regulatory framework covers Electrical/electronic apparatus, Environmental requirements and Health and safety. This however needs strengthening especially the actual enforcement of the laws.

Accreditation body - Even though the answer to this question on the existence of an accreditation body in Burundi is in the affirmative, subsequent declarations seem to suggest some reliance on a regional resource that can be made available to Burundi by virtue of their membership in the EAC. Thus a regional MRA regime would be an option that would be well suited for the ARCT.

Metrology - There exist metrology legislation and a National Institute of Metrology (the Metrological department) and the Burundi National Standards Board (BNN) responsible for

maintaining the national measurement standards in the country. It establishes and maintains their metrological traceability to the units of the International System of Units (SI)

4.3 C&I Requirements in Burundi

There is an urgent need to build legal, regulatory, laboratories and human capacity in the area of C&I for ICTs in Burundi so that it can fully realize the full potential of ICTs for its national and social development.

5.0 KENYA

5.1 Introduction

The Communications Authority of Kenya is the regulatory authority for the communications sector in Kenya⁶. Established in 1999 by the Kenya Information and Communications Act, 1998, the Authority is responsible for facilitating the development of the Information and Communications sectors including; broadcasting, multimedia, telecommunications, electronic commerce, postal and courier services. Part of its functions is licensing, compliance and enforcement which are part of the implementation of C&I in Kenya.

5.2 Overview of the C&I situation in Kenya

The following is an overview of the C&I situation in Kenya:

Conformance assessment - Conformance assessment scheme exists but does not include self-declaration of conformity or use of proxies such as Institute of Electrical and Electronics Engineers (IEEE), Federal communication commission (FCC), European Telecommunications Standardization institute (ETSI), etc.

Legislation - Kenya Information and Communications (Importation, Type Approval and Distribution of Communication Equipment) Regulations, 2010 establishes requirements for ICT products and services to be legally imported and deployed in the marketplace for ICTs and ICT services. This regulation provides for type approval of ICT equipment. The type approval evaluation takes into consideration conformance certification granted to equipment from accredited laboratories. There is a separate legal and regulatory framework covering Electrical/electronic apparatus, Environmental requirements and Health and safety.

⁶ <http://www.ca.go.ke/index.php/what-we-do>

Accreditation body - Kenya National Accreditation Service (KENAS) as a National Accreditation body, was preparing to undergo a peer review this June 2015 under the global International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) as a full member for the laboratory, inspection and certification scopes. This will provide mutual recognition in all (ILAC) signatory countries. However, the scope of this peer review does not cover ICTs.

The field and scope covered by KENAS are: Field - Inspection (ISO/IEC 17020), Testing & Calibration Lab (ISO/IEC 17025), Medical Laboratory (ISO/IEC 15189), and Certification (ISO 17021, ISO 17024, ISO 17065); and Scope - Petroleum, Agriculture commodities, general cargo & others; Chemistry, Microbiology, Mechanical & Electrical Metrology; General medical laboratory tests, Product and personnel certification in all sectors.

Metrology There exist metrology legislation and the National Institute of Metrology (the Metrological department) is responsible for maintaining the national measurement standards in the country. It establishes and maintains their metrological traceability to the units of the International System of Units (SI)

5.3 Specific Conformance and Interoperability Implementation in Kenya

The Communications Authority of Kenya (CA) is the ICT National Regulatory Authority (NRA). The C&I implementation at CA is as follows:

5.3.1 Type Approval

The type approval (TA) is carried out based on international standards such as those by ITU, ETSI; suppliers or vendors of equipment submit samples for type approval prior to importation into the country. The approach used is similar to that in the SADC.

With regard to specific absorption rate (SAR), CA requests and obtains the results for the mobile phones as part of type approval process where it (CA) accepts test results from accredited labs. CA accepts conformance certificates from a Regulatory Authority or accredited laboratory. Further, self-declaration of conformity from a manufacturer or supplier is also acceptable. Conformity Assessment Scheme also includes the use of proxies such as IEEE, FCC, ETSI, etc.

Type approval certificates. With regard to mobile phones, functional tests are carried out upon which equipment passing the tests are issued with a six-month provisional certificate of TA. If the performance of the equipment is still satisfactory at the expiry of this period, then final certificate of TA is issued. This procedure applies to all telecommunication equipment

5.3.2 Test beds

CA has test equipment for STBs for which standards against which type approval is done are published on CA websites for the public; the test equipment has capacity to serve the rest of the EAC region.

At the type of the assessment, CA is in the process of procuring test equipment from mobile phones. Meanwhile, the usual mechanisms of establishing whether a mobile phone is counterfeit or not are being implemented through the IMEI data base that is accessible by clients who dial phone *#06#. It is noted that some mobile phones may be genuine but of poor quality.

5.3.3 Mutual recognition agreements

Currently, CA does not have mutual recognition agreements with other organizations involved in C&I. However, it accepts equipment whose test results are from an accredited laboratory.

5.3.4 Standard Development Organisations in Kenya

The standards development organisation (SDO) in Kenya is the Kenya bureau of Standards (KEBS) with which CA has a MoU for participation in technical committees that deal with development of standards. In this regard, CA complements the KEBS' standardization efforts. KEBS does not have test beds for ICT equipment hence the MoU with CA on ICT matters. Further, there are no accredited labs in Kenya for the testing C&I of ICTs equipment.

5.3.5 Collaboration with Customs Department

The customs department of the Kenya Revenue Authority (KRA) is in charge of ports of entry of telecommunication/ ICT equipment. CA collaborates with Customs through correspondences comprising (i) lists of type approved equipment and, (ii) list of vendors/ suppliers who are licensed/ type approved to supply telecom/ ICT equipment into the Kenyan market.

Clearance of equipment. Clearance of equipment for UN agencies for use e.g., in Kenya, South Sudan or Somalia is done by CA. If the equipment is not already type approved, CA type approves it according to established procedures prior to clearance. For radio equipment UN agencies are required to apply for frequencies within which the equipment will be operating in addition to meeting other requisite standards

5.3.6 Compliance enforcement mechanisms

Even if equipment is type approved, subsequent equipment may not meet the standards hence the need for regular market inspections to ensure that equipment similar to that which was approved still complies with the required standards.

This is an area that needs more capacity to ensure compliance and C&I test beds/ labs can improve compliance. CA works with law enforcement agencies in executing its mandate. Further, though legal and regulatory provisions with regards to compliance are adequate, there is need for improvement in the enforcement of compliance the standards.

5.3.7 Communication Authority's Plans on C&I

CA is in the process of procuring equipment for testing mobile phones to ensure compliance to standards; it is also deepening its collaboration with KRA (Customs department), and with the law enforcement agencies in Kenya.

5.4 C&I Requirements in Kenya

There is an urgent need to build legal and regulatory, laboratories and human capacity in the area of C&I for ICTs in Kenya because most of the developments that have been realized in this areas do not cover ICTs.

In summary, CA requires support to establish labs and for training in C&I. It (CA) also considers C&I project as being crucial for consumer protection and for improvement of the quality of service since it will reduce degradation of networks over which services are delivered.

6.0 RWANDA

6.1 Introduction

Rwanda Utilities Regulatory Authority (RURA) is a multi-regulatory agency covering Water and Sanitation, Energy, Transport (personal and goods), and ICT. Rwanda Utilities Regulatory RURA was initially created by the [Law n° 39/2001 of 13 September 2001](#) with the mission to regulate certain public Utilities, namely: telecommunications network and/or Telecommunications services, electricity, water, removal of waste products from residential or business premises, extraction and distribution of gas and transport of goods and persons⁷.

6.2 C&I Problem in Rwanda

RURA noted that the C&I is an important regulatory tool for the region which is very urgent to address the problem of counterfeiting (e.g., mobile handsets) and improve the ease of doing business and quality of services delivered by operators/ service providers to consumers.

The C&I problem in Rwanda affects consumers, importers, operators, yet there no capacity to check for conformity to facilitate importations and to guarantee interoperability of systems once they are deployed in the country. Though RURA requires certification of conformance to standards certificate for imports, importers have a problem obtaining certificates of conformance/ test reports from their suppliers.

- (i) **Capacity constraints.** In the absence of the capacity to ensure conformance and interoperability, the regulator becomes a barrier to doing business because it does not have a framework for people to operate through with regard to importation and deployment of ICT systems; and provision of services to customers.
- (ii) **Dealing with counterfeit phones.** In order to address the C&I capacity limitation, RURA is working in partnership with GSMA to deal with counterfeit phones where the former uses the latter's database to verify that mobile phones are not counterfeits.
- (iii) **Digital migration**⁸. With regard to digital decoders, RURA requires (and enforces the requirement) that test results for the decoders are supplied to the regulator before

⁷ <http://www.rura.rw/index.php?id=3>

⁸ This issue is also common to other EAC Partner States; for example, Kenya has posted the compliance requirements for STBs online for the public

importation of the decoders into the country. This approach is used to ensure consumer protection. However, following up of the tests is difficult

6.3 Some Suggestions to move the C&I project forward⁹

(i) Suggestion on C&I Lab

RURA suggests that the C&I lab be housed in the (a) university then the regulator funds (i.e., subcontract). In this arrangement, the initial funding for test labs may be expensive but sustainability will be realized because the test services will be paid for by the operators, importers and even consumers who seek these services.

(ii) Study Group 11 activities¹⁰

RURA will be following up and participating in SG 11 activities/ work as part of enhancing their capacity in standardization/ standards development to support C&I projects.

7.0 TANZANIA

7.1 Introduction

The Tanzania Communications Regulatory Authority (TCRA) was established by the Tanzania Communications Regulatory Act No. 12 of 2003, with the responsibilities to regulate Electronic Communications, Spectrum Management and Broadcasting.

The Electronic and Postal Communications Act – EPOCA of 2010 came in force after repeal of Tanzania Communications Act No.18/1993 and Tanzania Broadcasting Services Act No.6/1993. Electronic and Postal Communications Act (EPOCA), No. 3 of 2010, and among other things provides the legal framework for Tanzania Communications Regulatory Authority (TCRA) for type approval of electronic communication equipment before sale, distribution or installation, and this include all electronic communications equipment to be used for connection or access to the public operating electronic communication networks; and wireless communications equipment to be used in the United Republic of Tanzania. In general it empowers the Authority to do the following:-

- ✓ Empowers the Authority to establish Technical Standards for any Equipment to be Connected to any Public Network;

⁹ Though Rwanda presented this suggestion, the ultimate EAC approach will be agreed upon after the validation workshop where a common EAC way forward will be discussed and recommendations reached

¹⁰ All 2 EACO Committees and 11 EACO Working Groups have one thing or the other on C&I and all their Reports to just ended 21st Congress aim at having a comprehensive and sustainable C&I in the Region. www.eaco.int

- ✓ Makes it Mandatory to Type Approve any Communications Equipment to be connected to any Public Network;
- ✓ Empowers the Authority to undergo Equipment Certification Process, **including Testing of such Equipment.**

It is one of the more established and experienced National Regulatory Agency (NRA) in Africa and has almost all the structures and resources in place to achieve its goals and mandates.

The TCRA issues, renews and cancels licenses. It sets standards to regulate goods and services in the electronic communications and broadcasting sectors. The standards are mostly to protect consumer interests and promote competition.

7.2 C&I Problem in Tanzania

TCRA recognizes the benefit of C&I to the region and has already embarked on programs within the Authority to make it ready to undertake C&I testing within its facilities, such as earmarking physical space for scalable Equipment Type Approval Laboratory services that once established can be upgraded into a full blown test facilities possible of handling C&I test suites.

Such facilities could become the nucleus of a more comprehensive C&I test facilities for the EAC region and beyond that help deal with the rampant issues of counterfeit products and sub-standard systems that do not conform to the required ITU standards and therefore do not guarantee interoperability when deployed in networks across the country in particular, and across the region in general due to Tanzania's geographical positioning within EAC. .

The country through TCRA and in consultation with ITU, embarked on a plan to establish a Type Approval Laboratory (TAL) Project by initiating consultancy procurement processes to conduct the feasibility study for the project;

The Consultants in February 2011 concluded the consultancy services for Feasibility Study on the Establishment of Electronic communications Equipment Type Approval Testing Laboratory in Tanzania. The Study declared the TAL project naturally viable;

TCRA has already initiated the process of having a Type Approval Laboratory (TAL) in place by procuring a plot near our main building, and among other things, the plot will accommodate the TAL. In order to archive this TCRA, engaged a consultant to carry out a feasibility study on the same, and the final report has been submitted to the Authority for implementation. In

fulfilling its mandate on electronic communication equipment standardization, TCRA have signed Memorandum of Understanding (MOU) with several Authority as follows:

- i. MOU with Tanzania Bureau of Standard in all issues related to standardization of electronic communication equipment and other regulated services
- ii. MOU with Tanzania Atomic Energy Commission in all issues related to electronic communication equipment radiations
- iii. MOU with Tanzania Civil Aviation Authority in all issues related to standards of Communications infrastructure and other regulated services

TCRA also participates in ITU study standardization activities including ITU-T SG11 and other forums, conferences related to standardization.

8.0 UGANDA

8.1 Introduction

The Conformance and interoperability (C&I) Assessment Study is part of the implementation of Resolution 76 (World Telecommunications Standardization Assembly 2008 [WTSA-08]) and related International Telecommunication union (ITU) Resolutions

The Uganda Communications Commission (UCC) Telecom and Broadcasting unit is responsible for reviewing and certifying telecom and broadcasting equipment, the section also performs post market surveillance for conformity.

For Broadcasting, the Telecom and Broadcasting section at the UCC drafts the minimum receiver specifications based on the different international receiver standards. These standards are then formally adopted by the Commission. Conformance to the set and adopted standards is ensured through type approval of samples of equipment before importation.

8.2 Conformance and Interoperability Situation in Uganda

(i) Broadcasting

Standards – there is a diversity of standards and different broadcast operators have historically aligned with differing standards. The differing standards are often non-interoperable.

Interoperability – broadcasters have motivation not to interoperate among their systems. For example, the proposal by the regulator to have one decoder with provision for various/different cards from broadcasters did not receive support from the latter. This is because the decoder is part of the broadcaster's business model i.e., the decoder is embedded as part of the service offering and also as a way of locking in customers. There is therefore need to create more awareness regarding this.

The Cost of the interoperable receivers – The receivers that are adaptable to different encryption and delivery platforms are much more expensive than the locked ones. This makes it challenging to convince consumers to choose them over the much cheaper locked ones.

Incompatible broadcast standards – It should also be noted that unlike telecom which has upward and downward compatibility as new standards and technologies emerge, the same is NOT true for broadcasting. For example, DVB Vs ATSC Vs ISMD these are all incompatible standards for digital terrestrial television broadcasting. And then still within these same parent standards, you find that the emerging ones are not backward compatible with the old ones: for example DVB and DVB T2.

Inadequate awareness - There appears to be inadequate awareness among broadcasters of the emerging and future trends in broadcasting subsector; and why interoperability is important. There is inadequate knowledge among broadcasters with regard to decoder types whether satellite, terrestrial, cable etc.

Digital migration – there is opportunity for multi-stakeholder engagement with regard to digital migration to ensure that it progresses smoothly. The policy makers need information on emerging issues (such as the C&I project and related matters – counterfeits, digital migration, quality of service etc.) on regular basis to assist them make decisions that can support the development of the ICT sector.

(ii) Telecoms

Compared to the broadcasting sub-sector, the telecom subsector has motivation to interconnect and interoperate with each other. This is partly because of their business models – namely they have to serve customers across various networks.

Counterfeits - equipment can conform to standards but still be counterfeit hence technical and commercial considerations are necessary. There is need for genuine but cheaper equipment in the EAC region. This calls for harmonization across the region with regard to counterfeits including fiscal interventions – taxes and duty which play a major role in the acquisition of ICT equipment including counterfeits. Currently, while the counterfeit phones are being barred by operators in some countries, the same does not apply in others.

Substandard equipment - It is also important to note that the region (EAC) works together to develop regional standards for ICT equipment. This will create a bigger market for ICT equipment thus guaranteeing manufacturer interest in producing equipment that conforms to the specifications in the whole region. The current situation is that manufacturers have different standards of equipment for the region depending on the disparate compliance

requirements of each country; as well as the perceived affordability of that particular receiver in different countries

Mobile phones - With regards to mobile phones which are some of the most affected by counterfeit, there is need to strengthen the market surveillance to such as by closely working with the manufactures, GSM Association (GSMA) and Customs agencies for purposes of identifying and enabling the barring of counterfeits, e.g., based on International Mobile Equipment Identity (IMEI) and blocking at border entry points. Anecdotal evidence places counterfeit phones in Uganda at 60% of the total. Though this may be the case, it appears the operators are undecided as to whether the commercial benefits arising from the use of these devices outweigh the negative impacts that they encounter as a result of service degradation arising from the counterfeits. However, by strengthening enforcement mechanisms for quality of service (QoS) and creation of awareness among consumers regarding the effects of counterfeits it will be possible to partner with service providers and the consumers to deal with counterfeit terminals/ equipment. This situation is also being addressed by the C&I project.

Customer and counterfeits – with regard to counterfeits, there are two categories of consumers; those who are unhappy with the regulator for not protecting them earlier, and those customers who are 'happy' with counterfeits because they cannot afford the genuine equipment. There is a third category of those who would want and can afford a genuine product but cannot differentiate it from the counterfeit.

Dumping of equipment into the country - as part of extension of the lifecycle of their products, most suppliers are exporting this equipment into the country/ region. In most cases, the production plants for such equipment are already closed in the country of origin.

(iii) Human capacity constraints

This is a cross cutting issue which affects the whole of the ICT sector. There is inadequate capacity among technicians who install operate and maintain the equipment; there is need for accreditation of technical staff to deal with the equipment – UCC is exploring this but needs capacity within itself as well to be able to accredit the ICT technical personnel.

UCC also manages the Uganda Institute of Communications Technologies. However, courses to support digital migration and broadcasting as a whole are in short supply.

(vi) e-waste management¹¹

Another problem associated with lack of conformance to standards is how to manage e-waste¹².

¹¹ Importation of counterfeit equipment contributes to e-waste which can be reduced through a comprehensive C&I regime in EAC

“e-waste problem has turned into a crisis primarily because of two reasons. First, it is hazardous because it contains numerous substances, many of which are toxic, and hence pollution is created upon disposal. Second, it is being generated at an alarming rate due to the constant evolution of technology, which in turn has driven the sale of new products, as well as frequent obsolescence of electronics’ (Republic of Uganda [MICT] August 2012)

The Electronic Waste (e-waste) Management policy (2012) for Uganda envisages the strengthening of the National Environment Act, Cap 153 laws of Uganda to have specific e-waste laws with enforcement mechanisms. The C&I project can play an important role in the implementation of e-waste policy by providing mechanisms for controlling the entry of counterfeits and reducing the dumping of obsolete equipment which rapidly become an e-waste problem.

8.3 Some Ways to Deal with Counterfeits

Some of the ways to address the counterfeits as suggested by UCC are as follows:

- (i) Empower consumers to demand guarantees from the suppliers - consumer education/ awareness
- (ii) Have identification marks for genuine products
- (iii) Devise a system of “on the spot identification” of genuine and counterfeit equipment¹³

8.4 Leapfrog the C&I Process

Based on Resolution 76 (World Telecom Standardization Assembly [WTSA]) and on other ITU Resolutions that followed it, there is need to leapfrog the C&I processes without making mistakes in order to realize an orderly development of ICTs in Uganda.

9.0 KEY FINDINGS

A common EAC C&I Regime is required to promote the “harmonization of appropriate policies, reducing technical barriers to trade by building capacity to improve, certify and assure the quality and standards of good” (The EU-Africa Roadmap 2014-2017).

Likewise, it is recognized at EAC, EACO and National levels, that widespread conformity and interoperability of ICT equipment and systems (C&I) through the implementation of relevant policies and regulatory decisions can increase market opportunities and reliability, improve

¹² It should be noted that e-waste is a generic terminology which covers various types of e-waste with different characteristics of conformance and interoperability. However, it is used here in the context of ICT equipment.

¹³ These are the suggestions by UCC (Uganda) as found out by the Consultant can form part of the discussion for the validation workshop with a view to arriving at a common C&I regime for the EAC.

affordability and access to ICTs, quality of service and consumer satisfaction and encourage global integration and trade.

In this regard, the following are the key findings of the C&I Assessment study in the EAC:

- (i) National/ regional Conformance and interoperability Test labs for various scopes of tests are necessary in the countries and in the region;
- (ii) Mutual recognition agreement regimes are needed;
- (iii) Capacity building on C&I is needed in the EAC region including through collaboration with academia and other institutions;
- (iv) Need for institutional capacity at EAC/EACO to progress the establishment of a common EAC C&I Regime.

10.0 NEXT STEPS - WAYFORWARD

In order to move the EAC C&I agenda forward the following actions are necessary:

- (i) Sharing of the EAC C&I report the National Focal Points during the Study, as well as with EAC/EACO secretariat and ITU AFR regional office for comment and consensus to be accomplished by mid-September 2015;
- (ii) Conducting a validation workshop of the final report which is scheduled to be held in Nairobi, 21-23 October 2015;
- (iii) Based on the outcome of the EAC C&I workshop, and drawing from the experiences in SADC C&I outcomes, it is recommended to establish a common C&I regime approach among EAC countries through establishing MRA and/ or building national/Regional Labs;
- (iv) Further, for purposes of driving the process of a common C&I regional through MRA and or building national/ regional laboratories creation of a C&I regional committee for EAC region is recommended.

11.0 RECOMMENDATIONS

11.1 Key Recommendations

Based on the assessment of the C&I situation in EAC and on experiences on similar assessments in SADC it is recommended as follows:

- (i) To establish a EAC C&I expert committee (Draft Term of References – **Appendix VIII**) to guide the realization of the common C&I regime among EAC through MRA and / or building of national/ regional labs
- (ii) To establish in-country/ regional conformance and interoperability Test labs for various scopes of tests are necessary in the countries and in the region
- (iii) To establish Mutual recognition agreement regimes in EAC
- (iv) To develop programmes for capacity building on C&I for EAC region
- (v) To collaborate with academia on establishment of test beds and capacity building

11.2 Roadmap for Key Recommendations

Further, and in line with C&I the experiences in SADC, the foregoing recommendations for a Common EAC C&I Regime are proposed to be progressed as follows:

- (i) All three plans (establishment of MRA, In-Country test labs and Regional test labs) that would arise from the work of the EAC C&I Expert Committee should be submitted to the attention of EAC secretariat for the follow-up while technical assistance shall be available from ITU/BDT for the development and execution of the recommended Plans.
- (ii) In order to establish a Training Programme to build capacity for C&I in EAC Member States it is recommended to identify institutions (Conformity Assessment Bodies) in the EAC Region that may be in a position to provide qualified training courses on C&I in the framework of an MOU signed with ITU as has been undertaken in other ITU Regions.
- (iii) The EAC Secretariat may facilitate this by liaising with appropriate institutions that would sign an MOU with the ITU.

12.0 COLLABORATIONS ON THE C&I ASSESSMENT IN EAC/EACO

MEETING WITH EACO

April 13-14, 2015

Participants

Hodge Semakula - Executive Secretary EACO
Carol Koech - Liaison Manager for ICT
Dr. Thomas Senaji - ITU Consultant/ C & I Project tсенaji@gmail.com

SUMMARY OF MEETING WITH RURA

April 15/16, 2015

Participants

Jean Baptiste Mutabazi- Head of Telecommunications baptiste.mutabazi@rura.rw
Noel Katete Gatera - Ag. Director of ICT Standards and QoS Unit noel.gatete@rura.rw
Dr. Thomas Senaji -ITU Consultant/ C & I Project tсенaji@gmail.com
In consultation with:
Antoinette Mbabazi - Rwanda Standards Bureau antoinette.mbabazi@rsb.gov.rw

Uganda Communications Commission (UCC) Offices, Bugolobi, Kampala Uganda

April 20 - 24, 2015

Participants

Helen Kyeyune	-	Head, Telecom and Broadcasting	hkyeyune@ucc.co.ug
Rebecca Mutike	-	Broadcasting	rmutike@ucc.co.ug
Robert Echeda			recheda@ucc.co.ug
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Kenya

Consultations with:

Chistopher Kemei	-	kemei@ca.go.ke	
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Njeri Mwangi	-	njeri@ca.go.ke	
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MEETING AT EAC SECRETARIAT

April 13-14, 2015

Arusha, Tanzania

Participants

Hosea Nyangweso

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(deputizing for Philip Wambugu – Director of Infrastructure) PWambugu@eachq.org

Joshua Peprah

ITU Consultant / C&I Project

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MEETING AT TCRA

April 15-18, 2015

Dar es Salam, Tanzania

Nehemia Mwenisongole

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James Kilaba (absent)

James.Kilaba@tcra.org.tz

Raynold Mfungahema (absent)

Raynold.Mfungahema@tcra.org.tz

Joshua Peprah

ITU Consultant / C&I Project

MEETING AT ARCT

April 20-21, 2015

Bujumbura, Burundi

Deo Bizindavyi (and team)

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Outcome of meeting:

A 2-day tutorial session on the questionnaire and how to answer the various sections were held with the entire team of the Equipment Type Approval section of the ARCT Burundi, to enable them achieve some basic understanding of the C&I principles and the genesis of the whole concept, since most of them have never been exposed to it at any level.

The ARCT-Burundi, no doubt, would benefit from capacity building that comes with the adoption of this program.

APPENDIX II - BURUNDI CONFORMANCE AND INTEROPERABILITY QUESTIONNAIRE RESPONSE

A. Geography and ICT Indicators

- ❖ Number of voice subscribers (fixed): **21 669**
- ❖ Number of voice subscribers (mobile): **3 193 257**
- ❖ Total Access lines (fixed and mobile): **3 214 926**
- ❖ Penetration of voice subscribers (fixed): **0,21%**
- ❖ Penetration of voice subscribers (mobile): **31,43%**
- ❖ Total penetration (both Fixed and Voice): **31,64%**
- ❖ Number of internet subscribers:
- ❖ Number of wireless internet subscribers:
- ❖ Number of fixed internet subscribers:
- ❖ Total internet penetration(both fixed and wireless)
- ❖ % of GSM coverage:
- ❖ % of 3G coverage:
- ❖ % of coverage for fixed access infrastructure (fibre and copper):

B. Service Providers

- ❖ Number of mobile network operators: **5**
- ❖ Number of fixed telephony operators: **1**
- ❖ Number of mobile network operators providing up to 3G services: **3**
- ❖ Number of service providers deploying WiMAX: **2**
- ❖ Number of service providers deploying 4G (LTE): **0**
- ❖ Number of telecom infrastructure providers (fibre/copper): **2**
- ❖ Number of telecom infrastructure providers (tower): **0**

C. Regulatory Framework and Institutions (Per Country)

C-1 Conformity Assessment

- ❖ Is there any regulatory framework and regulation which establishes requirements for products and services to be legally imported and deployed in the marketplace?

✓ YES

❖ If yes, what products/services/areas does it cover? (Indicate all that apply)

	Service/product/areas covered	YES	NO
1	ICT/telecom products and services (i.e. network and terminal equipment)	✓	
2	Electrical/electronic apparatus	✓	
3	Environmental requirements	✓	
4	Health and safety	✓	

❖ If yes, indicate the Conformity Assessment Schemes adopted for market entry (check all that apply)

	Conformity Assessment Scheme	Yes	No
1	Certification	✓	
2	Self-declaration of conformity		✓
3	Third party declaration of conformity (through conformity assessment body or a laboratory)	✓	
4	Labelling	✓	
5	Use of proxies such as IEEE, FCC, ETSI, etc.	✓	
6	Others (specify)		✓

- ❖ Are these Conformity Assessment Schemes based on the ISO/CASCO set of Guidelines and standards?

✓ YES

- ❖ If there is legislation and regulation dealing with ICT and telecom products and services and related areas such as electrical safety and environmental issues, how is it applied? Is it compulsory or voluntary?

✓ Compulsory

C-2 Standards Development Organization (SDO)

- ❖ Is there a national standards system and national standards development organisation (SDOs)? (indicate YES/NO in the following table)

	YES	NO
National standards system exists	Yes	
Standards Development Organisation (SDO) exists	Yes	

- ❖ Where such National Standards System/SDOs exist, are they committed to adoption of international standards wherever possible rather than developing national standards which may deviate from the international ones?

✓ Yes

- If yes please give reasons: yes :

✓ The Burundi as member of the east African Community, the Burundi Bureau of Standards (BBN) is engaged in the EAC Standards harmonisation system which is in line with the International Standards development.

C-3 Metrology

- ❖ Is there Metrology legislation and any National Institute of Metrology responsible for maintaining the national measurement standards in the country? Does it establish and maintain their metrological traceability to the units of the International System of Units (SI)?

	YES	NO
Metrology legislation exists?	✓	
National Metrology institute for national measurement	✓	
Does it establish and maintain their metrological traceability to the units of the International System of Units (SI)?	✓	

- ❖ If Metrology legislation exists **in your country** does it permit delegation of authorities to foreign entities under arrangements such as **MRAs (Mutual Recognition Agreement)** e.g. for calibration of equipment?

✓ **Not yet but it is on program**

C.-4 Development of conformity assessment programs

- ❖ Is there any Institution responsible for the Development of conformity assessment programs?

✓ **YES**

- ❖ If, YES, which areas of conformity assessment does it cover? (indicate all areas that apply)

	Areas covered by conformance assessment programs	YES	NO	M*	V^
1	Products	✓		✓	

2	Processes	✓			✓
3	Services		✓		
4	Personnel		✓		

* indicate whether conformance assessment in this area is mandatory (M)

^ indicate whether conformance assessment in this area is voluntary (V)

❖ What are these Institutions involved in the development of conformance assessment programs? (name all)

✓ Burundi Bureau of Standards and Quality Control (BBN)

✓ Laboratories

✓ Enterprises

❖ What are the possible resources from National/Regional/International Funds to assist private and public sector to invest in infrastructure, e.g., Labs and human resources? (list all)

✓ Government

✓ Donors (e.g.: UNDP, World BANK, EU, TMEA etc...)

❖ Is there legislation and regulation which establishes importation requirements for products and services such as ICTs including telecom products, electrical safety and environmental aspects:

✓ Yes

❖ How is importation control of the products entering the country/region enforced e.g. at point of entry, spot checks and post market surveillance?

✓ It is under Pre-verification of conformity (PVOC) program

- ❖ Is there a post market surveillance, audit and enforcement regime established for products entering the country/region, and deployed in the country/region, and a schedule of punishments for infractions? (indicate in the table that follows)



	Surveillance and enforcement	Yes	No
1	Post market surveillance	Yes	
2	Audit	Yes	
3	Enforcement	Yes	
4	Schedule of punishment for infractions	Yes	
5	Other /s		

- ❖ What actions, if any, are taken to identify counterfeit products and what actions are taken to remove such products from the marketplace and to deal with parties responsible for bringing them into, or deploying them in the country/region?

- *Counterfeit products are identified by (list all means e.g. Labs, market surveillance, unique identifiers etc.):*

- ✓ **Test analysis**
- ✓ **Market surveillance**
- ✓ **Entree-point control**

- *Actions taken to remove counterfeit products include (list/state all):*

- ✓ **Destruction of counterfeit products**
- ✓ **Reexport of counterfeit products**

- *Actions taken against parties that bring into and deploy counterfeit products include (list all action):*

✓ *Sensitization of parties*

D. Accreditation

❖ Is there any Accreditation Body (ISO/IEC 17011) (not only in ICT)?

✓ No; but the low provide the establishment of a National accreditation focal point.

❖ In which field/s does it (the accreditation body) accredit organisations and with what scopes?

	Accreditation body	Field (e.g. telecom)	Scope (e.g. products/services/personnel etc.)
1			
2			
3			
4			

E. Laboratories

❖ What are the Laboratories identified in the country/region and what service levels do they provide (e.g. 1st, 2nd and 3rd party testing)?

✓ *3rd party testing*

❖ Are they (Labs) Accredited (ISO 17025) or is there any kind of peer evaluation of the lab?

✓ No, but we are in process

❖ What are the fields and scopes of such Labs?

✓ Chemical analysis

✓ Test lab

✓ Metrology lab

❖ How is the laboratory funded? (by Government, Organisations and Individuals). Indicate all that apply

✓ Government and Donors

F. Certification Bodies And Marking

❖ What Certification Bodies (ISO/IEC 17065) are in the country, where are they located?

✓ CASLI(Certification Division) located at Burundi Bureau of Standards (BBN)

❖ What are the fields and scopes of the Certification Bodies? (name all, e.g., ICTs, Telecom, health)

✓ Product certification

❖ What Marks of conformity are on products in your country/region that are trusted – i.e. trusted Marks e.g. EU, FCC, IEC etc.

✓ BBN Marks, IEC, EU, KEBS, TBS, etc...

❖ Do you have any Mutual Recognition Arrangement (MRA) with any country/ laboratory/certification body?

✓ Yes

APPENDIX III - KENYA CONFORMANCE AND INTEROPERABILITY QUESTIONNAIRE RESPONSE

A. Geography and ICT Indicators¹⁴

Number of voice subscribers (fixed): **179, 990**

Number of voice subscribers (mobile): **33.6 million**

Total Access lines (fixed and mobile): **33,632,631**

Penetration of voice subscribers (fixed): **0.44%**

Penetration of voice subscribers (mobile): **82.6%**

Total penetration (both Fixed and Voice): **83.04%**

Number of internet subscribers: **16,453,019**

Number of wireless internet subscribers: **16,357,239**

Number of fixed internet subscribers: **95,780**

Total internet penetration (both fixed and wireless): **64.3%**

% of GSM coverage: **60%**

% of 3G coverage: **15%**

% of coverage for fixed access infrastructure (fibre and copper): **(Not available)**

B. Service Providers

Number of mobile network operators: **3**

Number of fixed telephony operators: **1**

¹⁴ Figures as at December 2014

Number of mobile network operators providing up to 3G services: **3**

Number of service providers deploying WiMAX: **19**

Number of service providers deploying 4G (LTE): **1**

Number of telecom infrastructure providers (fibre/copper):**11**

Number of telecom infrastructure providers (tower): **1**

C. Regulatory Framework and Institutions (Per Country)

C-1 Conformity Assessment

- ❖ Is there any regulatory framework and regulation which establishes requirements for products and services to be legally imported and deployed in the marketplace?

Yes

- ❖ If yes, what products/services/areas does it cover? (Indicate all that apply)

	Service/product/areas covered	YES	NO
1	ICT/telecom products and services (i.e. network and terminal equipment)	√	
2	Electrical/electronic apparatus	√	
3	Environmental requirements	√	
4	Health and safety	√	

- ❖ If yes, indicate the Conformity Assessment Schemes adopted for market entry (check all that apply)

	Conformity Assessment Scheme	Yes	No
1	Certification	√	
2	Self-declaration of conformity		√
3	Third party declaration of conformity (through conformity assessment body or a laboratory)	√	
4	Labelling	√	
5	Use of proxies such as IEEE, FCC, ETSI, etc.		√
6	Others (specify)		

- ❖ Are these Conformity Assessment Schemes based on the ISO/CASCO set of Guidelines and standards? **yes**

- ❖ If there is legislation and regulation dealing with ICT and telecom products and services and related areas such as electrical safety and environmental issues, how is it applied? Is it compulsory or voluntary? **Compulsory**

C-2 Standards Development Organization (SDO)

- ❖ Is there a national standards system and national standards development organisation (SDOs)? (indicate YES/NO in the following table)

	YES	NO
National standards system exists	√	
Standards Development Organisation (SDO) exists	√	

- ❖ Where such National Standards System/SDOs exist, are they committed to adoption of international standards wherever possible rather than developing national standards which may deviate from the international ones? **Yes**

- If yes please give reasons

For ease of trade and Kenya participates in International standardization hence the stakeholders are always aware of developments internationally

C-3 Metrology

- ❖ Is there Metrology legislation and any National Institute of Metrology responsible for maintaining the national measurement standards in the country? Does it establish and maintain their metrological traceability to the units of the International System of Units (SI)?

	YES	NO
Metrology legislation exists?	√	
National Metrology institute for national measurement	√	
Does it establish and maintain their metrological traceability to the units of the International System of Units (SI)?	√	

- ❖ If Metrology legislation exists **in your country** does it permit delegation of authorities to foreign entities under arrangements such as MRAs e.g. for calibration of equipment? **Yes**

C.-4 Development of conformity assessment programs

- ❖ Is there any institution responsible for the Development of conformity assessment programs? **YES**
- ❖ If, **YES**, which areas of conformity assessment does it cover? (indicate all areas that apply)

	Areas covered by conformance assessment programs	YES	NO	M*	V^
1	Products	√		√	
2	Processes		√		
3	Services	√			√
4	Personnel	√			√

* indicate whether conformance assessment in this area is mandatory (M)

^indicate whether conformance assessment in this area is voluntary (V)

- ❖ What are these Institutions involved in the development of conformance assessment programs? (name all) **Kenya Bureau of Standards though it does not have adequate capacity for ICTs**
- ❖ What are the possible resources from National/Regional/International funds necessary to assist private and public sector to invest in infrastructure, e.g., Labs and human resources?(list all)
 - **testing equipment**
 - **Training of personnel**
- ❖ Is there legislation and regulation which establishes importation requirements for products and services such as ICTs including telecom products, electrical safety and environmental aspects? **YES**
- ❖ How is importation control of the products entering the country/region enforced e.g. at point of entry, spot checks and post market surveillance?

- **Ensure Certificate of conformity (COC) is issued by the Kenya Bureau of Standards (KEBS) appointed conformity assessment partners i.e., BUREAU VERITAS, INTERTEK , CCIC and SGS**
 - **Testing before release of products that are not issued with certificate of conformity**
 - **Confirmation through inspection at the entry point**
- ❖ Is there a post market surveillance, audit and enforcement regime established for products entering the country/region, and deployed in the country/region, and a schedule of punishments for infractions? (indicate in the table that follows)

	Surveillance and enforcement	Yes	No
1	Post market surveillance	√	
2	Audit		√
3	Enforcement	√	
4	Schedule of punishment for infractions	√	
5	Other /s		

- ❖ What actions, if any, are taken to identify counterfeit products and what actions are taken to remove such products from the marketplace and to deal with parties responsible for bringing them into, or deploying them in the country/region?
- *Counterfeit products are identified by (list all means e.g., Labs, market surveillance, unique identifiers etc.):*
 - **Lab test**
 - **collaborating with the original manufacturer to give the defining features of their products**
 - **working with relevant bodies such as Kenya Industrial Property Institute (KIPI) and Anti counterfeit Authority**
 - *Actions taken to remove counterfeit products include (list/state all):*
 - **Destruction of products identified as counterfeits**
 - **Taking offenders to the court and imposing fines**
 - **creating awareness to the consumers on the dangers of counterfeits**
 - *Actions taken against parties that bring into and deploy counterfeit products include (list all action):*

- **Destruction of products identified as counterfeits causing loss of their business**
- **Taking offenders to the court, imposing fines**

D. Accreditation

- ❖ Is there any Accreditation Body (ISO/IEC 17011) (not only in ICT)? **Yes, Kenya Accreditation Service (KENAS), which is an Associate member International Laboratory Accreditation Cooperation (ILAC), member International Accreditation Forum (IAF).**
- ❖ In which field/s does it (the accreditation body) accredit organisations and with what scopes?

	Accreditation body	Field (e.g. telecom)	Scope (e.g. products/ services/personnel etc.)
1	KENAS	Inspection ISO/IEC 17020 Testing & Calibration Lab ISO/IEC 17025 Medical Laboratory ISO/IEC 15189 Certification ISO 17021, ISO 17024, ISO 17065	Petroleum, Agriculture commodities, general cargo & others. Chemistry, Microbiology, Mechanical & Electrical Metrology General medical laboratory tests Product and personnel certification in all sectors.
2			
3			
4			

E. Laboratories

- ❖ What are the Laboratories identified in the country/region and what service levels do they provide (e.g. 1st, 2nd and 3rd party testing)?
 - **Testing and calibration laboratories. 35 in total number. They offer 2nd and 3rd party testing & calibration.**
- ❖ Are there (Labs) Accredited (ISO 17025) or is there any kind of peer evaluation of the lab?
 - **Accredited to ISO/IEC 17025:2005.**

- ❖ What are the fields and scopes of such Labs?
- **Chemistry & Microbiology Testing, Mechanical & Electrical Metrology.**

- ❖ How is the laboratory funded? (by Government, Organisations and Individuals). Indicate all that apply
- **Government, Organisations and Individuals.**

F. Certification Bodies And Marking

- ❖ What Certification Bodies (ISO/IEC 17065) are in the country, where are they located?
- **None, but one is currently undergoing assessment for ISO/IEC 17065 product certification accreditation - the Kenya Flower Council.**
- ❖ What are the fields and scopes of the Certification Bodies? (name all, e.g., ICTs, Telecom, health)
- **Product certification – Agricultural sector.**
- ❖ What Marks of conformity are on products in your country/region that are trusted – i.e. trusted Marks e.g. EU, FCC, IEC etc.
- **CE, Coffee mark of origin,**

- ❖ Do you have any Mutual Recognition Arrangement (MRA) with any country/ laboratory/certification body?
- **As a National Accreditation body, we are currently preparing to undergo a peer review this June 2015 under the global ILAC Mutual Recognition Arrangement (MRA) as a full member for the laboratory, inspection and certification scopes. This will provide mutual recognition in all ILAC signatory countries.**

APPENDIX IV - RWANDA CONFORMANCE AND INTEROPERABILITY QUESTIONNAIRE RESPONSE

A. Geography and ICT Indicators

- ❖ Number of voice subscribers (fixed): 49, 612 subscribers as of December, 2014
- ❖ Number of voice subscribers (mobile): 7,747,019 subscribers as of December, 2014
- ❖ Total Access lines (fixed and mobile): 7,796,631 subscribers as of December, 2014
- ❖ Penetration of voice subscribers (fixed): 0.45% as of December, 2014
- ❖ Penetration of voice subscribers (mobile): 70% as of December, 2014
- ❖ Total penetration (both Fixed and Voice): 70.45% as of December, 2014
- ❖ Number of internet subscribers: 3,111,992 subscribers as of December, 2014
- ❖ Number of Mobile internet subscribers: 3,108,877 subscribers as of December, 2014
- ❖ Number of fixed internet subscribers: 3,115 subscribers as of December, 2014
- ❖ Total internet penetration(both fixed and Mobile): 28% as of December, 2014
- ❖ % of GSM coverage:
 - Geographic Coverage: 99.08%
 - Coverage in terms of Population: 99.9%
- ❖ % of 3G coverage:
 - Geographic Coverage: 64.49%
 - Coverage in terms of Population: 85.07%
- ❖ % of coverage for fixed access infrastructure (fibre and copper):
 - Backbone Fibre Infrastructure:
 - Olleh Rwanda: 2,229 Km
 - MTN Rwanda: 815 Km
 - Liquid Telecom: 928 Km
 - EWSA: 760 Km

B. Service Providers

- ❖ Number of mobile network operators: 3

- ❖ Number of fixed telephony operators: 2
- ❖ Number of mobile network operators providing up to 3G services: 3
- ❖ Number of service providers deploying WiMAX: 9
- ❖ Number of service providers deploying 4G (LTE): 1
- ❖ Number of telecom infrastructure providers (fibre/copper): 5
- ❖ Number of telecom infrastructure providers (tower): 4 (Here 7 providers are licensed/have permits but 4 providers are installing towers currently (IHS, TIGO, Olley Rwanda and Rwanda Tower)

C. Regulatory Framework and Institutions (Per Country)

C-1 Conformity Assessment

- ❖ Is there any regulatory framework and regulation which establishes requirements for products and services to be legally imported and deployed in the marketplace?
Yes

- ❖ If yes, what products/services/areas does it cover? (Indicate all that apply)

	Service/product/areas covered	YES	NO
1	ICT/telecom products and services (i.e. network and terminal equipment)	✓	
2	Electrical/electronic apparatus		
3	Environmental requirements		
4	Health and safety		

- ❖ If yes, indicate the Conformity Assessment Schemes adopted for market entry (check all that apply)

	Conformity Assessment Scheme	Yes	No
1	Certification	✓	
2	Self-declaration of conformity	✓	
3	Third party declaration of conformity (through conformity assessment body or a laboratory)	✓	
4	Labelling		

5	Use of proxies such as IEEE, FCC, ETSI, etc.	√	
6	Others (specify) Type Approval		

- ❖ Are these Conformity Assessment Schemes based on the ISO/CASCO set of Guidelines and standards? **No**

- ❖ If there is legislation and regulation dealing with ICT and telecom products and services and related areas such as electrical safety and environmental issues, how is it applied? Is it compulsory or voluntary? **Yes, article 42 of telecom law. It is compulsory**

C-2 Standards Development Organization (SDO)

- ❖ Is there a national standards system and national standards development organisation (SDOs)? (indicate YES/NO in the following table) **Yes**

	YES	NO
National standards system exists	√	
Standards Development Organisation (SDO)exists		

- ❖ Where such National Standards System/SDOs exist, are they committed to adoption of international standards wherever possible rather than developing national standards which may deviate from the international ones? **Yes they are committed to adopt the International standards**
 - If yes please give reasons (I think it is the capacity to develop their own standards and the need to deviate from International standards)

C-3 Metrology

- ❖ Is there Metrology legislation and any National Institute of Metrology responsible for maintaining the national measurement standards in the country? Does it establish and maintain their metrological traceability to the units of the International System of Units (SI)?

	YES	NO
Metrology legislation exists?	No idea (think this part should be filled by RSB)	
National Metrology institute for national measurement	√	
Does it establish and maintain their metrological traceability to the units of the International System of Units (SI)?	√	

- ❖ If Metrology legislation exists in your country does it permit delegation of authorities to foreign entities under arrangements such as MRAs e.g. for calibration of equipment? Rwanda Standards Board - RSB

C.-4 Development of conformity assessment programs

- ❖ Is there any Institution responsible for the Development of conformity assessment programs? Not yet established
- ❖ If, YES, which areas of conformity assessment does it cover? (indicate all areas that apply)

	Areas covered by conformance assessment programs	YES	NO	M*	V^
1	Products	√		√	
2	Processes	√		√	
3	Services	√		√	
4	Personnel				

* indicate whether conformance assessment in this area is mandatory (M)

^ indicate whether conformance assessment in this area is voluntary (V)

RSB has the mandate to cover all the areas but has limited capacity e.g. Lack of enough test laboratories

- ❖ What are these Institutions involved in the development of conformance assessment programs? (name all)
RSB, RURA, REMA, RDB....etc.

- ❖ What are the possible resources from National/Regional/International Funds to assist private and public sector to invest in infrastructure, e.g., Labs and human resources? (list all)
Mobilization of resources is yet to be done

- ❖ Is there legislation and regulation which establishes importation requirements for products and services such as ICTs including telecom products, electrical safety and environmental aspects. The new legislation is in pipeline but the type approval process is being enforced.

- ❖ How is importation control of the products entering the country/region enforced e.g. at point of entry, spot checks and post market surveillance?
They are controlled through the points of entry

- ❖ Is there a post market surveillance, audit and enforcement regime established for products entering the country/region, and deployed in the country/region, and a schedule of punishments for infractions? (indicate in the table that follows)
- ❖

	Surveillance and enforcement	Yes	No
1	Post market surveillance		✓
2	Audit		✓
3	Enforcement	✓	
4	Schedule of punishment for infractions	✓	
5	Other /s		

- ❖ What actions, if any, are taken to identify counterfeit products and what actions are taken to remove such products from the marketplace and to deal with parties responsible for bringing them into, or deploying them in the country/region?

- *Counterfeit products are identified by (list all means e.g. Labs, market surveillance, unique identifier etc.):*

Through type approval process by analysing the test reports and samples

- *Actions taken to remove counterfeit products include (list/state all):*

The products found to be counterfeit are not allowed to be sold on the Rwanda market they should be shipped to the country of their origin

- *Actions taken against parties that bring into and deploy counterfeit products include (list all action):*

No action taken so far apart from the ban of the product on market

D. Accreditation

- ❖ Is there any Accreditation Body (ISO/IEC 17011) (not only in ICT)? **No**
- ❖ In which field/s does it (the accreditation body) accredit organisations and with what scopes? **N/A**

	Accreditation body	Field (e.g. telecom)	Scope (e.g. products/ services/personnel etc.)
1			
2			
3			
4			

E. Laboratories

- ❖ What are the Laboratories identified in the country/region and what service levels do they provide (e.g. 1st, 2nd and 3rd party testing)?

None

- ❖ Are they (Labs) Accredited (ISO 17025) or is there any kind of peer evaluation of the lab?

None

- ❖ What are the fields and scopes of such Labs?

N/A

- ❖ How is the laboratory funded? (by Government, Organisations and Individuals). Indicate all that apply

N/A

F. Certification Bodies And Marking

- ❖ What Certification Bodies (ISO/IEC 17065) are in the country, where are they located? None

- ❖ What are the fields and scopes of the Certification Bodies? (name all, e.g., ICTs, Telecom, health) N/A

- ❖ What Marks of conformity are on products in your country/region that are trusted – i.e. trusted Marks e.g. EU, FCC, IEC etc.

FCC, CE

- ❖ Do you have any Mutual Recognition Arrangement (MRA) with any country/ laboratory/certification body? NO

APPENDIX V – TANZANIA CONFORMANCE AND INTEROPERABILITY QUESTIONNAIRE RESPONSE

SECTION ONE

A. Geography and ICT Indicators

- ❖ Total Area: 1,009,365 Square KM (National Bureau of Statistics NBS, Tanzania)
- ❖ Highest point: 5895 m, Kilimanjaro Mountain (National Bureau of Statistics NBS, Tanzania)
- ❖ Lowest point: 0 m, Indian Ocean (National Bureau of Statistics NBS, Tanzania)
- ❖ Penetration of Telecoms and Internet including wireless, broadband and ICTs:-
- ❖ Number of voice subscribers (fixed):167,192 (TCRA quarterly statistics report, September 2013)
- ❖ Number of voice subscribers (mobile):26,855,735 (TCRA quarterly statistics report, September 2013)
- ❖ Penetration of voice subscribers (fixed): 0.4% (TCRA quarterly statistics report, September 2013)
- ❖ Penetration of voice subscribers (mobile):60% (TCRA quarterly statistics report, September 2013)
- ❖ Number of internet subscribers: 14% (Tanzania Telecommunications Report Q2, 2013)
- ❖ Number of wireless internet subscribers: 3,150 (TCRA, Internet and Data Services in Tanzania, A supply side survey report, 2010)
- ❖ Number of fixed internet subscribers: 594 (TCRA, Internet and Data Services in Tanzania, A supply side survey report, 2010)
- ❖ Number of internet subscribers using mobile phones for access: 462,514 (TCRA, Internet and Data Services in Tanzania, A supply side survey report, 2010)
- ❖ Penetration of internet subscribers: 11% (TCRA, Internet and Data Services in Tanzania, A supply side survey report, 2010)
- ❖ Penetration of fixed internet subscribers: 0.6% (TCRA: IST-Africa Consortium, 2010)
- ❖ Penetration of wireless internet subscribers:9.3% (TCRA: IST-Africa Consortium, 2010)
- ❖ % of telecommunications coverage:
- ❖ % of 3G/wireless broadband coverage: 5.5% (TCRA: IST-Africa Consortium, 2010)
- ❖ % of coverage for fixed access infrastructure (fibre and copper): Not yet determined

- ❖ Penetration of internet in rural areas: Not yet determined
- ❖ Penetration of voice in rural areas: Not yet determined

B. Service Providers

- ❖ Number of mobile network operators: 6 (TCRA quarterly statistics report, June 2013)
- ❖ Number of fixed telephony operators: 2 (TCRA quarterly statistics report, June 2013)
- ❖ Number of mobile network operators providing 3G (WCDMA, HSDPA, HSPA+) services: 4 (Tanzania Telecommunications Report Q2, 2013)
- ❖ Number of service providers deploying WiMAX: 6 (Tanzania Telecommunications Report Q2, 2013)
- ❖ Number of service providers deploying LTE: 2 (Tanzania Telecommunications Report Q2, 2013)
- ❖ Number of service providers providing Internet: 66 (TCRA, Internet and Data Services in Tanzania, A supply side survey report, 2010)
- ❖ Number of fixed Internet service providers: 2 (TCRA, Internet and Data Services in Tanzania, A supply side survey report, 2010)
- ❖ Number of wireless Internet service providers: 31 (TCRA, Internet and Data Services in Tanzania, A supply side survey report, 2010)
- ❖ Number of telecom infrastructure providers: 22 (TCRA, Licenced operators)
- ❖ Number of telecom infrastructure providers (fibre/copper): 3
- ❖ Number of telecom infrastructure providers (tower): 2
- ❖ Number of foreign owned telecom service providers: Vodacom, Airtel, Tigo, Zantel, Smart, Tanzania Telecommunications Company Limited, Viettel, (partly has foreign ownership, shared with Tanzanians)

C. Regulatory Framework and Institutions (Per Country)

- ❖ Is there any regulatory framework and regulation which establishes technical requirements for products and services to be legally imported and deployed in the marketplace?

Electronic and Postal Communications Act (EPOCA), No. 3 of 2010, provides the legal framework for Tanzania Communications Regulatory Authority (TCRA) for type approval of electronic communication equipment before sale, distribution or installation, and this include all electronic communications equipment to be used for connection or access to the public operating electronic communication networks; and wireless communications equipment to be used in the United Republic of Tanzania. And even before EPOCA, TCRA had the Electronic Communications Equipment Standards, Regulations, 2014 which was dealing with type approval of all electronic and communications equipment.

If yes, what products/services/areas does it cover? (Indicate all that apply)

	Service/product/areas covered	YES	NO
1	ICT/telecom products and services (i.e. network and terminal equipment)	YES	
2	Electrical/electronic apparatus	YES (electronic)	

❖ If yes, indicate the Conformity Assessment Schemes adopted for market entry (check all that apply)

- Certification

The equipment Approval procedures include: There are several means of electronic communications equipment certification as applicable by the Authority; including Manual Type Approval certification process and Online Type Approval certification.

Under Manual Type Approval certification process applicants need to follow one of the following procedures:-

- Manufacturer's declaration of conformity procedure (MDC)

Under the MDC procedure, suppliers need not submit any sample unit of equipment to the Regulatory Authority for testing or evaluation unless specifically requested to do so.

Instead, they need only to submit an MDC form together with the application form, specification checklist, test reports and/or equipment certification, photographs, technical documents and approval fees. The MDC procedure is based on the submission of a MDC Form and suitable test reports and the overall type approval is essentially a document evaluation process. OR

- Equipment submission procedure for any type of electronic communications equipment.

A sample unit of equipment e.g. Switching, Radio/Transmission, telephone set, cellular telephone set, facsimile machine, switchboards with 10 extensions or less etc. need to be submitted together with the necessary documentations.

In all the two procedures above the applicant shall collect type approval application form from the Authority, fill the form and return it to the Authority with the following documents-

- (a) User manual,
- (b) Operational manual,
- (c) Technical document consisting of a general description of equipment, technical data and facilities supported;
- (d) Sales brochures;
- (e) Manufacturers declaration of conformity; and
- (f) Any other documents that the applicant considers useful to the Authority

- Online Type Approval certification

The applicant will use any of the following general procedures:

- (a) applicant selects an application type for submission (Simplified Electronic Type Approval Process (SETA) or General Electronic Type Approval Process (GETA));
- (b) Applicant reads and confirms declarations;
- (c) Applicant enters type, name and model of the equipment to be applied for type approval and searches it in the database to confirm whether or not the same has been approved already;

(d) Applicant fills in online application form, attach necessary documents, declares that the information given is correct and submits the application;

(e) On successful submission, the applicant will be informed of the application status through email, including sending of invoices and certificates.

-In case SETA is selected-

(a) The applicant self declares that the equipment applied for certification conforms to standards;

(b) The applicant submits Supplier's Declaration of Conformity, equipment sales brochures and technical data or specifications;

(c) Under this category applicants must have carried out own conformity assessment for the model of equipment based on test results and/or evidence of equipment certification given by the manufacturer or an accredited body;

(d) Equipment covered under this category are: GSM/CDMA and DECT phones, Wireless LAN, Bluetooth, RFID, cordless telephones, wireless microphones, remote controls and alarm systems, some walkie-talkie, Cable Modems, ADSL, STBs and other low power devices and terminal equipment (CPE).

-If the Application is through GETA-

(a) the applicant submits additional information of the equipment for detailed evaluation by the Authority prior to certification, including User manuals (front page and equipment specification pages), Sales brochures, technical data, Photos of equipment (color photographs, capturing front, rear, and side views), Declaration of conformity, Test reports/results, and certificates (if any) from accredited body;

(b) Equipment under this process shall include; high power radio communication equipment/apparatus, Complex/Multi-line equipment (e.g. switching systems, ISDN PRA/BRA equipment, PBX, Base Stations, etc.), 3G and Wireless Broadband equipment, and any other network equipment.

- Self-declaration - YES

- Third party declaration (through conformity assessment body) - NO

- Labelling – Not yet
 - Use of proxies such as IEC, FCC, ETSI, etc. - NO
 - Others (specify) _____
- ❖ Are these Conformity Assessment Schemes based on the ISO/CASCO set of Guidelines and standards? NO.
 - ❖ If there is legislation and regulation dealing with ICT and telecom products and services and related areas such as electrical safety and environmental issues, how is it applied? Is it compulsory or voluntary?
 - ❖ YES, “Electronic Communications Equipment Standards, Regulations, 2014” A supplier, importer or distributor as the case may be who applies for equipment type approval shall follow one of the application procedures, namely-
 - Manufacturer’s declaration of conformity procedure (MDC)

Under the MDC procedure, suppliers need not submit any sample unit of equipment to the Regulatory Authority for testing or evaluation unless specifically requested to do so. Instead, they need only to submit an MDC form together with the application form, specification checklist, test reports and/or equipment certification, photographs, technical documents and approval fees. The MDC procedure is based on the submission of a MDC Form and suitable test reports and the overall type approval is essentially a document evaluation process. OR

 - Equipment submission procedure for any type of electronic communications equipment.

A sample unit of equipment e.g. Switching, Radio/Transmission, telephone set, cellular telephone set, facsimile machine, switchboards with 10 extensions or less etc. need to be submitted together with the necessary documentations.

 - It is compulsory.

- ❖ Where such legislation and regulation exists does it permit delegation of authorities to foreign entities under arrangements such as Mutual Recognition Agreements (MRAs) on Conformity Assessment e.g. for certification? - NO
- ❖ Is there a national standards system and national standards development organisation (SDOs)? (indicate YES/NO in the following table)

	YES	NO
National standards system	Tanzania Bureau of Standards, (TBS)	
SDO	(TBS)	

- ❖ Where such SDOs exist are they committed to adoption of international standards wherever possible rather than developing national standards which may deviate from the international ones? NO, there are some developed within the country and others adopted from international standards.
- ❖ Is there Metrology legislation and any National Institute of Metrology responsible to maintain the national measurement standards in the country; to establish and maintain their metrological traceability to the units of the International System of Units (SI)?

	YES	NO
Metrology legislation exists?	YES	
National Metrology institute for national measurement and their traceability to international units	YES	

- ❖ If Metrology legislation exists in your country does it permit delegation of authorities to foreign entities under arrangements such as MRAs e.g. for calibration of equipment? NO

- ❖ Is there any Institution responsible for the Development of conformity assessment programs? **NO**
- ❖ If, YES, which areas of conformity assessment does it cover? (indicate all areas that apply)

	Areas covered by conformance assessment programs	YES	NO	M*	V^
1	Products				
2	Processes				
3	Services				
4	Personnel				

** indicate whether conformance assessment in this area is mandatory (M)*

^ indicate whether conformance assessment in this area is voluntary (V)

What are these Institutions involved in the development of conformance assessment programs?

- ❖ What are the possible resources from National/Regional/International Funds to assist private and public sector to invest in infrastructure, e.g., Labs and human resources? (list all)
 - National Budget
 - Government institutions
 - Development partners
- ❖ Is there legislation and regulation which establishes importation requirements for products and services such as ICTs including telecom products, electrical safety and environmental aspects – **YES**
 - (Electronic Communications Equipment Standards, Regulations, 2014)
 - The National Environment Management Council Act, 1983 was the first law to demonstrate the government’s interest in development that takes the environment into consideration.

- The Environmental Management Act, 20 of 2004
- Electrical safety under TBS especially on all imported electrical item.
- ❖ How is importation control of the products entering the country/region enforced e.g. at point of entry, spot checks and post market surveillance?
Tanzania Communications Regulatory Authority (TCRA) does market surveillance to make sure all electronic communication equipment meets technical specifications and standards. Also Tanzania Bureau of Standards (TBS) also does make market surveillance to make sure electronic communications equipment which are entering our country are within the standards. TBS usually do inspection of all importation at the point of entry and also outside the country pre-shipment verification to standards.
- ❖ Is there a post market surveillance, audit and enforcement regime established for products entering the country/region, and deployed in the country/region, and a schedule of punishments for infractions?
Yes, TCRA usually conduct market surveillance on all equipment requiring type approval based on either a complaint or as part of a random audit. If found selling equipment which are not type approved, the penalty is fine not exceeding 5 million Tanzanian shillings or one year imprisonment or both.
- ❖ What actions, if any, are undertaken to identify counterfeit products and what actions are taken to remove such products from the marketplace and to deal with parties responsible for bringing them into, or deploying them in the country/region?
- *Counterfeit products are identified by (list all means):*
 - *Market Surveillance*
 - *Inspection of importations at the point of entry usually done by TBS and Customs (Tanzania Revenue Authority)*
 - *Complaint from customers*
- *The actions taken to remove counterfeit products include (list/state all):*
 - *Equipment confiscated and removed from the market*
 - *Penalty of not less than five million is issued to those selling electronic communication equipment which are not type approved by TCRA.*

- *Action taken against parties that bring into and deploy counterfeit products include (list all action):*

- *Financial penalty of not more than 5 million Tanzanian shillings*
- *One year imprisonment*
- *Both financial penalty and imprisonment*

D. Accreditation

❖ Is there any Accreditation Body (ISO/IEC 17011) (not only in ICT)?

NO

❖ In which field/s does it accredit organisations and with what scopes?

	Accreditation body	Field (e.g. telecom)	Scope (e.g. Product/services/personnel etc.)
1			
2			
3			
4			

E. Laboratories

❖ What are the Laboratories identified in the country/region and what service levels do they provide (e.g. 1st, 2nd and 3rd party testing)? - None

❖ Are they (Labs) Accredited (ISO 17025) or is there any kind of peer evaluation of the lab? - NO

❖ What are the fields and scopes of such Labs? - NO

❖ How is the laboratory funded? (By Government, Organisations and Individuals). Indicate all that apply - Not Applicable

F. Certification Bodies And Marking

❖ What Certification Bodies (ISO/IEC 17065) are in the country, where are they located? - Not applicable

- ❖ What are the fields and scopes of the Certification Bodies? (e.g. ICTs and Telecom) - Not applicable
- ❖ What Marks of conformity are on products in your country/region that are trusted – i.e. trusted Marks e.g. EU, FCC, IEC etc. - Not applicable

SECTION TWO

G. Demographics

- ❖ Population (Total): 44,928,923 (National Bureau of Statistics, Tanzania)
- ❖ Population (Female): 23,058,933 (National Bureau of Statistics, Tanzania)
- ❖ Population (Male): 21,869,990 (National Bureau of Statistics, Tanzania)
- ❖ Population Growth Rate: 2.9% (National Bureau of Statistics, Tanzania)
- ❖ Birth Rate: 5.4% (National Bureau of Statistics, Tanzania)
- ❖ Death Rate: 8.41/1000 (CIA World Fact Book)
- ❖ Life Expectancy: 51 (National Bureau of Statistics, Tanzania)
- ❖ Life Expectancy (Female): 57 years (National Bureau of Statistics, Tanzania)
- ❖ Life Expectancy (Male): 54 years (National Bureau of Statistics, Tanzania)
- ❖ Fertility Rate: 5.4% (National Bureau of Statistics, Tanzania)
- ❖ Infant Mortality Rate: 51 per 1000 (National Bureau of Statistics, Tanzania)
- ❖ Literacy rate: 71% (National Bureau of Statistics, Tanzania)
- ❖ Age Structure
- ❖ 0-14 years: 19,725,456 : 43.9% (National Bureau of Statistics, Tanzania)
- ❖ 15-64 years: 23,466,616 : 52.2 % (National Bureau of Statistics, Tanzania)
- ❖ 65 and above: 1,736,851 : 3.9% (National Bureau of Statistics, Tanzania)
- ❖ Native Languages: Many
- ❖ Official Languages: Swahili and English

H. Economy (National Bureau of Statistics, Tanzania and CIA The World Fact book)

- ❖ Gross Domestic Product (GDP):-
- ❖ GDP Growth: 7.5%
- ❖ GDP per capita: 652.0 USD

- ❖ GDP by sector: 1.4% Agriculture; Fishing 1.8%; Mining 19.1%; Manufacturing 8.6%; Electricity and Water 6.3%; Construction 5.3%; Trade 9.5%; Transport and Communication 22.2%
- ❖ Inflation: 6.3%
- ❖ Unemployment Rate: 11.7%
- ❖ Main industries: Agriculture and mining
- ❖ Exports (value): \$5.098 billion
- ❖ Export Goods: gold, coffee, cashew nuts, manufactures, cotton
- ❖ Main Export Partners: India 14.1%, China 11%, Japan 6.1%, Germany 5%, UAE 4.9%
- ❖ Imports (value): \$10.33 billion
- ❖ Import Goods: consumer goods, machinery and transportation equipment, industrial raw materials, crude oil
- ❖ Main Import Partners: China 21.1%, India 16.1%, Kenya 6.6%, South Africa 5.6%, UAE 4.8% (2012)
- ❖ Foreign Direct Investment (value): \$1.095 billion
- ❖ Gross External Debt (country specific): \$11.58 billion
- ❖ Public Debt (country specific) : 36.4% of GDP
- ❖ Foreign Reserves (country specific): \$4.053 billion

APPENDIX VI – UGANDA CONFORMANCE AND INTEROPERABILITY QUESTIONNAIRE RESPONSE

2) General aspects of the Country

a) Description of the region/ Uganda

Demography: Population of 37 million with 50% below the age of 15, and 20% between 24 - 54, population urbanization is 15.5%. Total country surface area is 236,040 square kilometers.

The current tele-density is 56.5%. Total national telephony subscription is 20 million. A recent study carried out in 2015, indicated that 52.3% of users owned a mobile phone and at least 20% more than 2 SIM cards. An independent study on counterfeits on mobile phones in 2013 by UCC found out that 29.5% of the mobile phones in use are counterfeit.

Uganda has 5 GSM/UMTS networks with overall land coverage of 85% and three long-term evolution (LTE) networks in Kampala.

b) Are there least developed country (LDC) or low income country (LIC) members in the region?

Uganda is an LDC as well as a LIC

3) Regulatory Framework

a) Is there any regulatory framework and regulation which establishes technical requirements for products and services to be legally imported and deployed in the marketplace e.g., ICT products and services, electrical apparatus, environment requirements.

Yes, there is a regulatory framework in place: The regulatory framework encompasses the Type approval regulations developed pursuant to the Communications Act 2013 Laws of Uganda. However, there are legislative frameworks that complement the type approval regulations these include:

1. The Penal Code Act, 1950 (Cap. 120), 10 which prohibits counterfeiting of trademarks and makes it a misdemeanor punishable by imprisonment for a period not exceeding two years.

2. The Patents Act, 1993, (Cap. 216), which provides for the grant, registration and protection of patents in Uganda.
3. The Patents (Amendment) Act, 2002, which provides for international patent applications and connected matters by giving effect in Uganda to the provisions of the Patent Corporation Treaty (PCT).
4. The Trademarks Act No.7, 2010,11 replaced the old Trademarks Act, Cap 217 to take into account new technological developments and recognise the prevailing existence of international obligations. It takes into account the enforcement of IP and related laws, industrial property, patents, trade names and trademarks.
5. The Copyrights and neighbouring Rights Act No. 19, 2006, 12 which provides for alternative dispute resolution mechanisms, copyright and related rights (neighbouring rights), enforcement of IP and related laws, trademarks, traditional cultural expressions and traditional knowledge.
6. The Trade Secrets Protection Act, No. 2, 2009, 13 which deals with the protection of trade secrets.

UCC is mandated to develop and enforce the technical standards in the ICT sector. The other lead institutions are National Environment and Management Authority (NEMA), Uganda Revenue Authority (URA), Uganda Registration Services Bureau (URBS) and Uganda National Bureau of Standards (UNBS):

- The Uganda National Bureau of Standards (UNBS) is mandated to ensure that products on the local market comply with certain standards in various aspects and to prohibit substandard goods where necessary. UNBS achieves this through import inspection, market surveillance, laboratory testing and metrology
- The Uganda Revenue Authority (URA) is mandated to assess and collect tax revenue. The Customs department inspects all imports at points of entry for purposes of valuation and assessment and could thus prevent the entry of counterfeit phones
- The Uganda Registration Services Bureau (URBS) is mandated to make all registrations required under relevant laws. Registrations include, births and deaths, business names, companies, marriage, partnerships, documents, and Intellectual Property (IP) like trademarks, copyrights and patents
- The National Environment and Management Authority (NEMA) is mandated to coordinate, monitor, regulate and supervise environmental management in Uganda. Besides protecting and managing local genetic IP, NEMA also oversees the safe disposal of electronic waste like that emanating from counterfeit or old used mobile phones.

b) What are the Conformity assessment schemes for market entry (certification, self-declaration, labelling. Use of proxies such as EC, FCC or others etc.)? Are they based on the ISO/CASO set of Guidelines and standards?

-
- Mandatory requirement for certification before importation
- Self-declaration is a requirement limited to licensed equipment vendors and network operators
- Labelling has been enforced for broadcasting equipment, while introduction of the same concept for the telecom sector is planned,
- The proxies – European commission (EC) and Federal Communication Commission (FCC) - are part of the requirements used for assessing conformance for certification.
- Conformance is based on international standards. Some of the standards recognized are IEEE, ISO, ITU, FCC, EC, and ETSI set of guidelines and standards.

c) If there is legislation and regulation dealing with ICT, how is it applied? Is it compulsory or voluntary?

There is the Communications Act 2013 and the Communications Equipment Type Approval regulations which give effect to the law. It is compulsory.

d) Where such legislation exists does it delegate authority to foreign entities under arrangements such as Mutual Recognition Agreements (MRAs) on conformity assessment?

No, it does not delegate authority to foreign entities.

e) Is there a national standards system and national Standards Development Organisations (SDOs)?

Yes, Uganda National Bureau of Standards.

f) Where such SDO exists are they committed to adoption of international standards wherever possible rather than developing national standards which may deviate from the international ones?

Yes, UNBS is an activate participant in international forums however UCC has the mandate to develop standards for the telecom/ICT sector.

- g) Is there metrology legislation and any institute of metrology responsibility to maintain the national measurement standards in the country; to establish and maintain their metrological traceability to SI units?

There is no specialized institute; however, UNBS maintains and enforces national measurement standards; and ensures traceability to the units of the international system (SI) of units.

- h) Where metrology legislation exists does it permit delegation of authorities to foreign entities under arrangements such as MRAs e.g., for calibration of equipment?

Yes, UNBS has similar arrangements with other international test centers of excellence.

- i) Is there any institution responsible for the development of conformity assessment programs, in the areas of products, processes, services and personnel, mandatory or voluntary, which involve the approval of regulations? What are these institutions?

UCC is mandated by the Communications Act 2013 laws of Uganda to develop conformance assessment programs in the telecom sector, the regulations are approved by the Ministry of ICT and through the Ministry of Justice presented to parliament for approval. Parliament approves all regulations.

- j) What are the possible resources from national/regional/international funds are needed to assist private and public sector to investment in infrastructure, e.g., Labs and human resource?

Human Capacity development, equipment capacity development and testing infrastructure; with the possible funding resources from the ITU, AfDB and the World Bank.

- k) Is there legislation for importation requirements

Yes, the type approval regulations; under the PVoC (Pre-export Verification of Conformity) arrangement between UNBS and SGS and interTek. Listed products including ICT equipment are required to be certified at country of origin however the arrangement for ICT is not currently active due to lack of an M.O.U between UCC and UNBS for this purpose.

- l) How is the importation control of the products entering the country?

Importation control is done by Uganda National Bureau of Standards (UNBS) at border points however the absence of the MOU with UCC makes it impossible to check ICT gadgets.

m) Is there a post market, audit and enforcement regime established for products entering the country and a schedule of punishments

No, however post market surveillance is spontaneous. It is not structured into the Uganda Communications Commission (UCC) operations.

n) What actions are taken to identify counterfeit products and what actions are taken to remove such products from the market place and to deal with parties responsible for bringing them into the country,

- For GSM mobile phones potential buyers and users are encouraged to use the GSMA data base that Uganda Communications Commission (UCC) has made accessible to the public.
- UCC also plans to activate the central equipment identification register (CEIR) that will identify and eliminate counterfeit phones from the networks.
- UCC plans to register, certify and license large distributors, brand owners or their representatives to address inflows of counterfeit phones.
- UCC plans to enhance capacity of custom officers at border points to check and stop entry of counterfeits.
- UCC plans to adopt MRAs with international labs
- UCC through the government plans to establish MOU with Chinese government for recertification of all units before exports (PVoC)
- For broadcast equipment an approval mark has been developed by the Commission.
-

o) Accreditation

Is there accreditation body in ICT in Uganda? No

p) Laboratories

What are the laboratories identified in the country and what service levels do they provide?

No laboratories.

Are they accredited? No

q) Certification Bodies and Marking

- What certification bodies are in the country, where are they located? Yes, UCC certifies telecom and broadcast equipment. UNBS is a certification body but deals with other products rather than ICTs
- What are the scopes of the certification bodies in ICTs and Telecom? UCC certifies all radio communications and telecommunications equipment.
- What are the marks of conformity are on the products in your country that are trusted?

The UCC mark of approval affixed on Set Top Boxes (STB) and, UNBS mark of approval of other products. FCC, ITU, EU marks for conformance are recognized.

APPENDIX VII – EAST AFRICAN COMMUNITY CONFORMANCE AND INTEROPERABILITY QUESTIONNAIRE RESPONSE

CONFORMANCE AND INTEROPERABILITY STUDY IN THE EAST AFRICAN COMMUNITY

EAC Questionnaire

1.0 Preamble

On the request of the East African Communications Organization (EACO), the Telecommunications Development Bureau (BDT) of the International Telecommunication Union (ITU) is going to carry out a study on the five countries of the East African Community (EAC) which involves collecting and analyzing data in the overall framework of conformance and interoperability (C&I), specifically on standardization, interoperability of systems and conformance regimes in the EAC. The study will cover technical, policy, legal regulatory and operational aspects of C&I.

2.0 C&I at EAC Level

Information on Standardization, Conformance and Interoperability (SCI) with regard to ICTs is sought in this section

2.1 PROTOCOLS. Are there EAC protocols that address the following issues with regard to ICTs? If yes, please indicate the specific protocols against each item

Issue	Protocols (Yes/No)	Description of the protocols
Standardization		
Conformance		
Interoperability		

POLICIES. Are there ECP policies that address the following ICT issues? If yes please indicate the specific policies against each issue

Issue	Policies (Yes/No)	Description of the policies

Standardization		
Conformance		

2.2 INSTITUTIONS. Are there institutions that deal with the following issues? If yes, what are the institutional arrangements at EAC to deal with the following ICT issues?

Issue	Institutions exist (Yes/No)	Description of the institutions
Standardization		
Conformance		
Interoperability		

2.3 GAP ASSESSMENT. Do you perceive any gaps in dealing with the following ICT issues at EAC level? If yes, please indicate the specific gaps against each issue

Issue	Perceived Gap? (Yes/No)	Description of the specific gap/s
Standardization		
Conformance		
Interoperability		

3.0 SCI¹⁵ Gaps in other sectors (other than ICTs)

Besides the ICTs, in which other sectors do you perceive gaps with regards to standards, conformance and interoperability?

3.1 Sector Name: (name of sector other than ICT in which there are SCI gaps)

Issue	Perceived Gap? (Yes/No)	Description of the specific gap/s
Standardization		
Conformance		
Interoperability		

3.2 Sector Name _____ (name of sector other than ICT in which there are SCI gaps)

Issue	Perceived Gap? (Yes/No)	Description of the specific gap/s
Standardization		
Conformance		
Interoperability		

¹⁵ Standardization, Conformance and Interoperability

Special Notes on expected responses from EAC Secretariat:

While the EAC secretariat was unable to complete the specific questionnaire submitted to them, there is no doubt that the spirit of Articles 98 & 99, falls in line with the overall principles of the C&I project.

Our interactions with Mr. Hosea Nyangweso, who was acting for Mr. Philip Wanbungu, Director of Infrastructure, left me convinced that the C&I project will go a long way to complement what the EAC is seeking to achieve by way of Articles 98 & 99, as far as the Telecom/ICT sector is concerned. Thus there is room for collaboration going forward.

EAC Regional Committee on Conformity and Interoperability (C&I)

Terms of Reference

According to the Outcomes and Recommendations (In-Country Labs, Regional Labs, MRAs) coming from the Workshop for EAC Countries to Promote the Development and Implementation of Conformity Assessment Programmes, Nairobi , Kenya, 21-23 October, 2015 the Committee chaired by the EAC Secretariat will discuss the following tasks.

1. The possibility for the establishment of EAC In-Country C&I Testing Laboratories and develop an implementation plan. This plan shall include the criteria to determine the locations and the testing scopes of these in-country C&I Testing Laboratories. The testing scopes of the In-Country C&I Testing Laboratories should complement each other in order to provide maximum scope and coverage within the EAC Region.

Reference: [Feasibility Study for a Conformance Testing Center.](#)

2. The possibility for the establishment of Regional C&I Testing Laboratories and develop an implementation plan. This plan shall include the criteria to determine the numbers, locations and testing scopes of these Regional C&I Testing Laboratories.

Reference: [Guidelines for Developing Countries on establishing conformity assessment test labs in different regions.](#)

3. The possibility for the establishment of an EAC MRA Framework based on worldwide best practices (e.g., the EAC MRA could be based on existing Framework MRAs in other regions, the Inter-American MRA (CITEL MRA) for the Americas and the APEC TEL MRA (APEC MRA) for the Asia Pacific region) and develop an implementation plan.

The EAC Regional Committee can create a draft MRA based on the above mentioned MRAs already in place to meet specific requirements of the EAC Region.

The Committee will adjust the proposed draft MRA to meet specific EAC countries technical and administrative requirements. The technical features of the Inter-American MRA could be adopted in order to retain compatibilities with Framework MRAs of other regions.

ITU BDT will provide expert advice to the Committee on the development of the EAC MRA and will be available at the first meeting of the Committee to provide a detailed view of the best practices.

Once the Committee has completed its work, it will submit the draft EAC MRA to the appropriate EAC countries Minister’s Council for endorsement.

The Committee will remain active after the endorsement of the EAC MRA to support the implementation of the EAC MRA.

In implementing the EAC MRA, Members States shall become signatories to this multilateral arrangement in the EAC Region. Participation in the EAC MRA is voluntary.

Reference: [Guidelines for the development, implementation and management of Mutual Recognition Agreements \(MRAs\), Establishing Conformity and Interoperability Regimes: Basic Guidelines.](#)

Once Ministerial endorsement of the three plans developed by the Committee has been received, follow-up and technical assistance shall be available from ITU/BDT for the development and execution of the recommended plans.

GENERAL COMMENTS

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