Guidelines of C&I Regimes (Conformity and Interoperability Frameworks)

"Legal, Policy and Regulatory Aspects of C&I"
15th to 19th November, 2021

NATIONAL COMMUNICATIONS AUTHORITY

Presentation Outline

- Roadmap to establishing C&I regimes.
- Conformity Assessment
  - Accreditation Bodies, Certification Bodies and Laboratories
- C&I Regulatory Framework
  - General Procedure for C&I Assesment
  - Product Assement Procedures
- ICT standards and C&I
  - Standards and Technical Requirments
  - ICT Standards Setting – Ghana's Experience
  - Standards Vrs Regulations
- Type Approval, Certification
- Self – Declaration process
- Mutual Recognition Agreement/Arrangement (MRAs)

Roadmap for the establishment of conformity and interoperability regimes

1. A telecommunication act with clear statements of the underlying policy. This statement would cover such elements as:
   - reliable and affordable telecommunication services of high quality;
   - highlighted role of telecommunications to enhance efficiency and competitiveness;
   - efficient and effective regulation where required;
   - responsiveness to the economic and social requirements of users of telecommunication services;
   - international telecommunication services and licenses;
2. Telecommunication apparatus and administration:
   - application to apparatus subject to regulation;
   - government powers and exercise of powers;
   - certification and marking;
   - appeals and evidence;
   - regulations including fees and mandatory requirements.
3. Investigation and enforcement:
   - administrative and monetary penalties;
   - inspection and market surveillance;
   - civil liability

Conformity Assessment

Conformity Assessment (CA) involves a set of processes that show your product, service or system meets the requirements of a standard.

Benefits:

- It provides stakeholders a higher level of confidence.
- It gives brand owners competitive advantage.
- It helps regulators ensure compliance (health, safety or environmental, etc)

Conformity Assessment Bodies

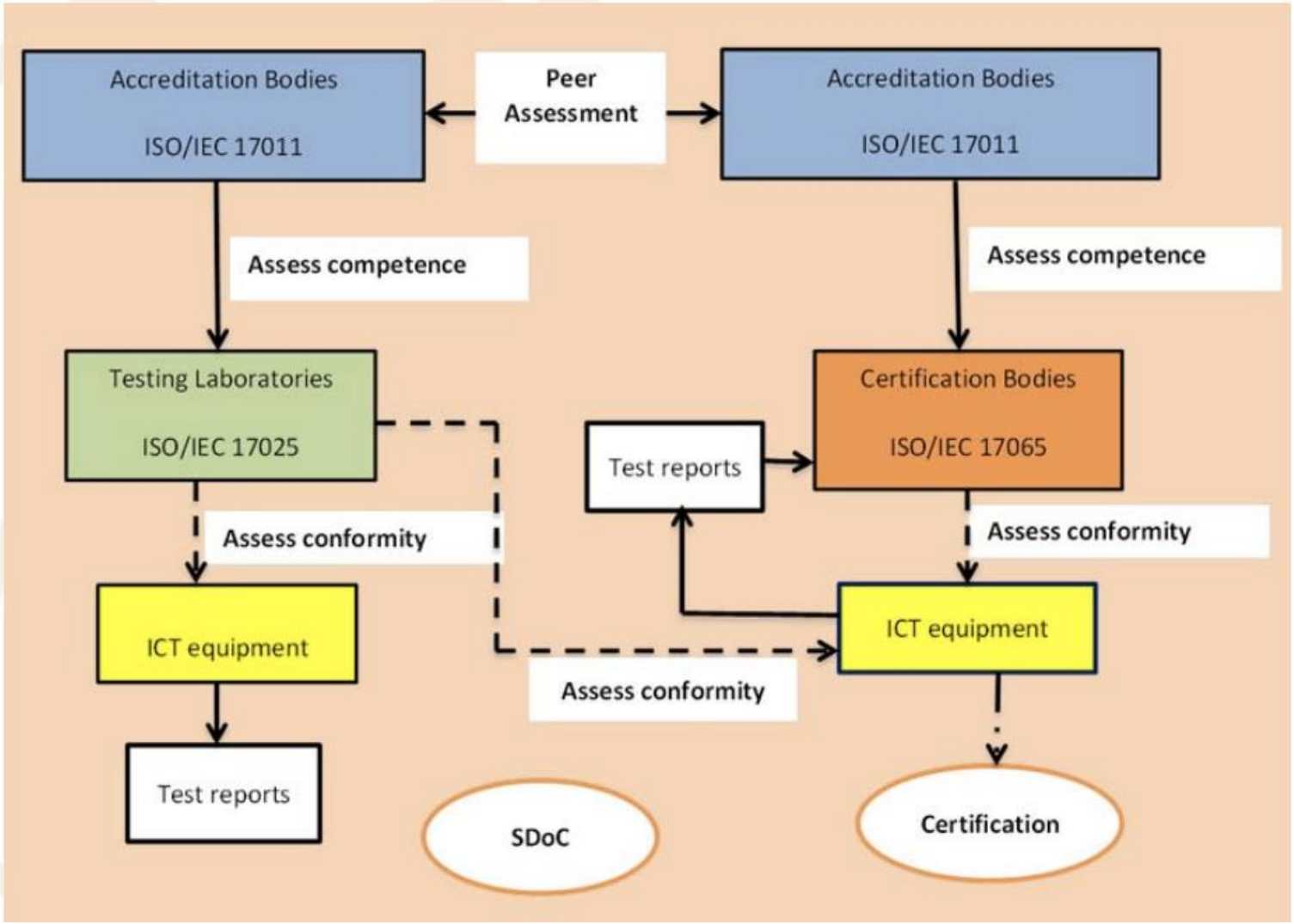
Bodies within the Conformity Assessment Ecosystem

Accreditation

Certification

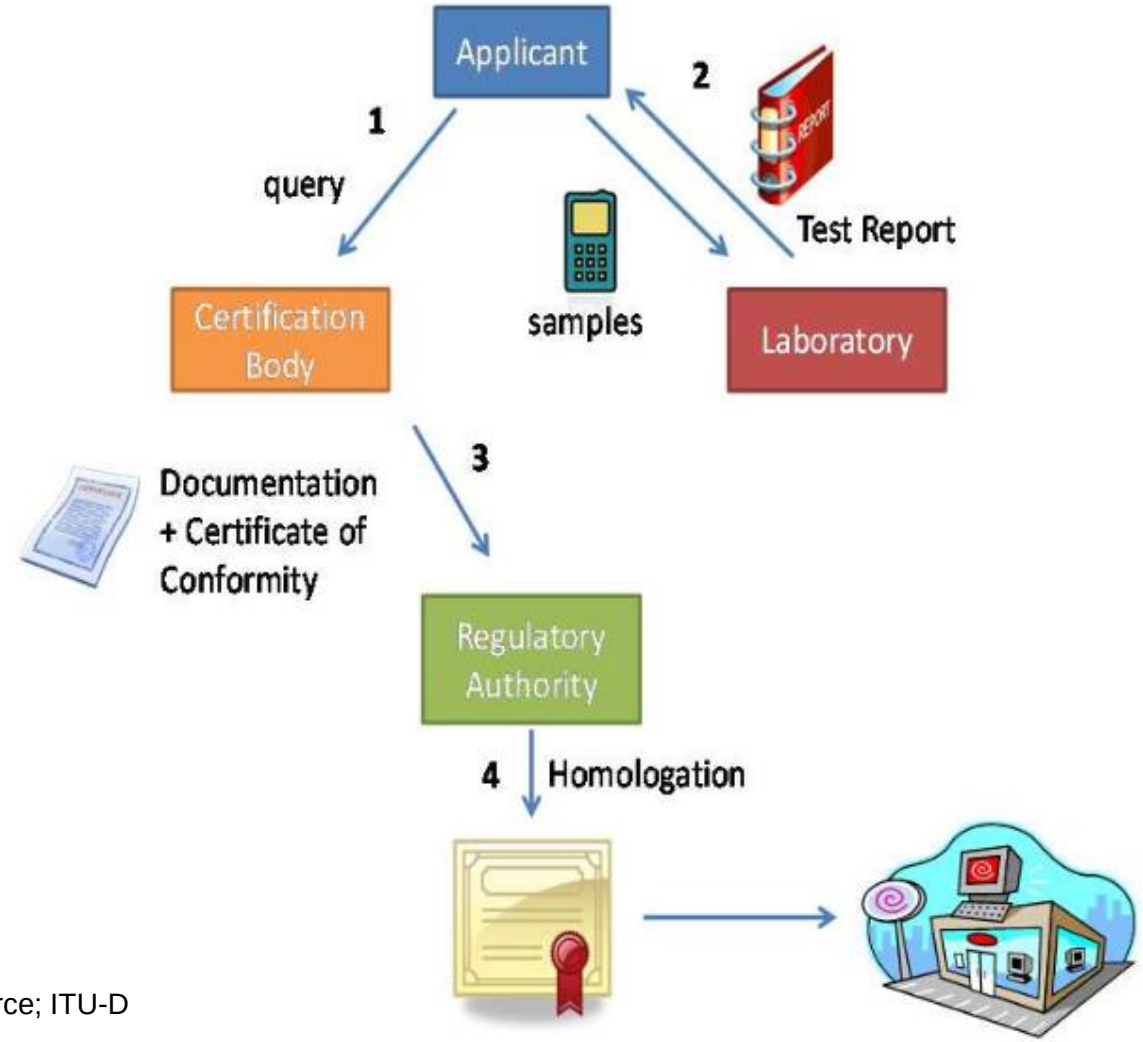
Testing

Conformity Assessment Bodies



Source; ITU-D

General Procedure for C&I Assessment



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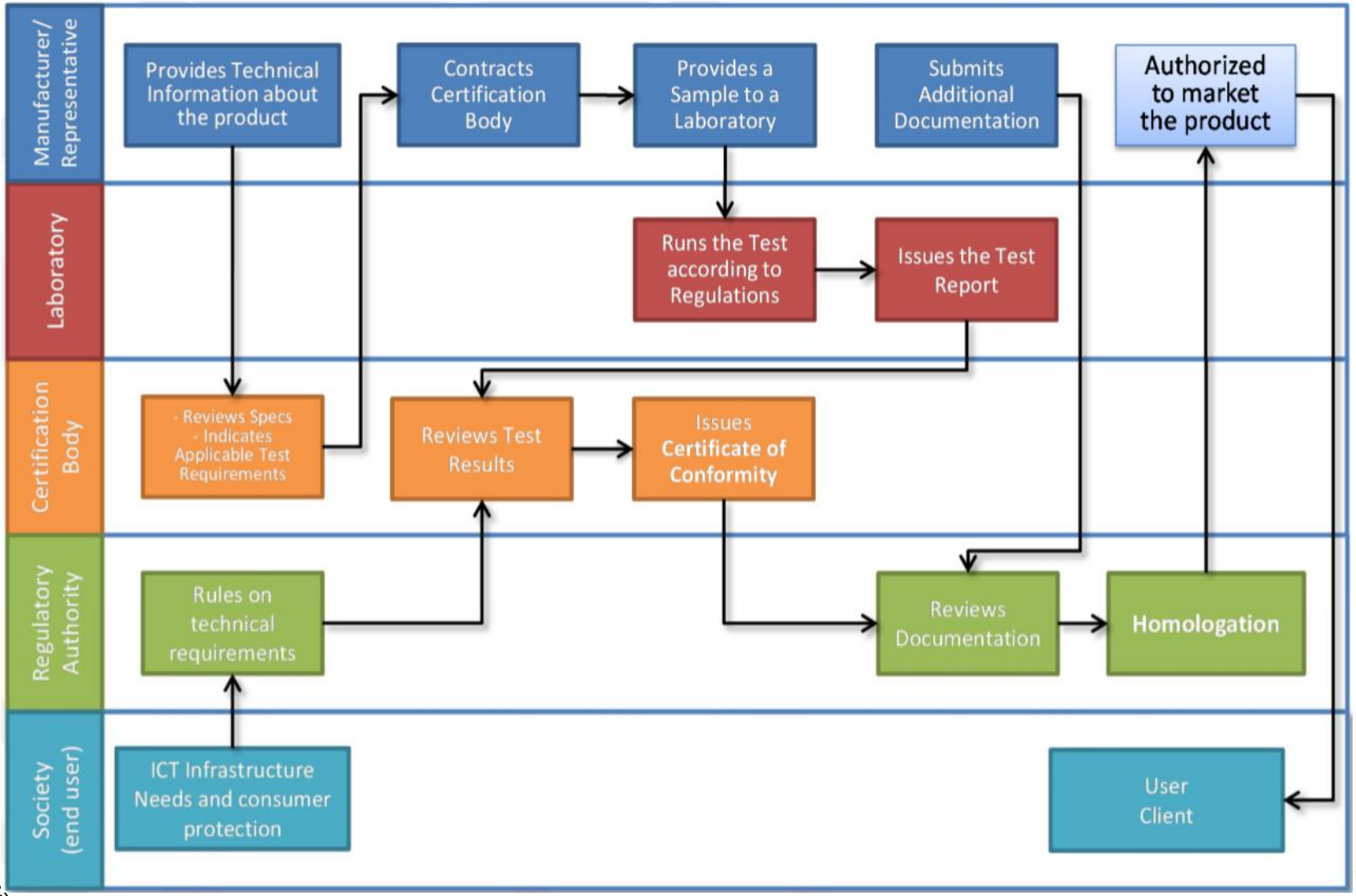
Product Assessment Procedures



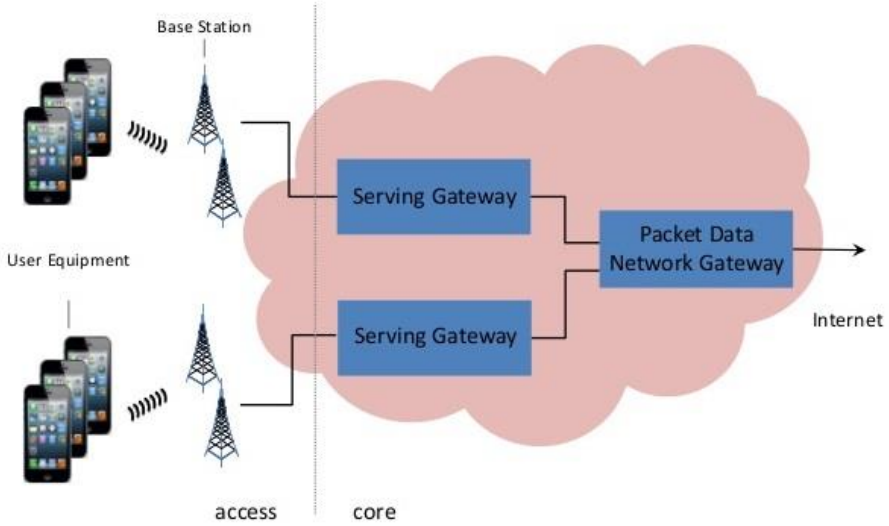
Standardization in C&I

STANDARDS:

Established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results aimed at the achievement of the optimum degree of order in a given context. [ISO/IEC Guide 2: 1996, definition 3.2]

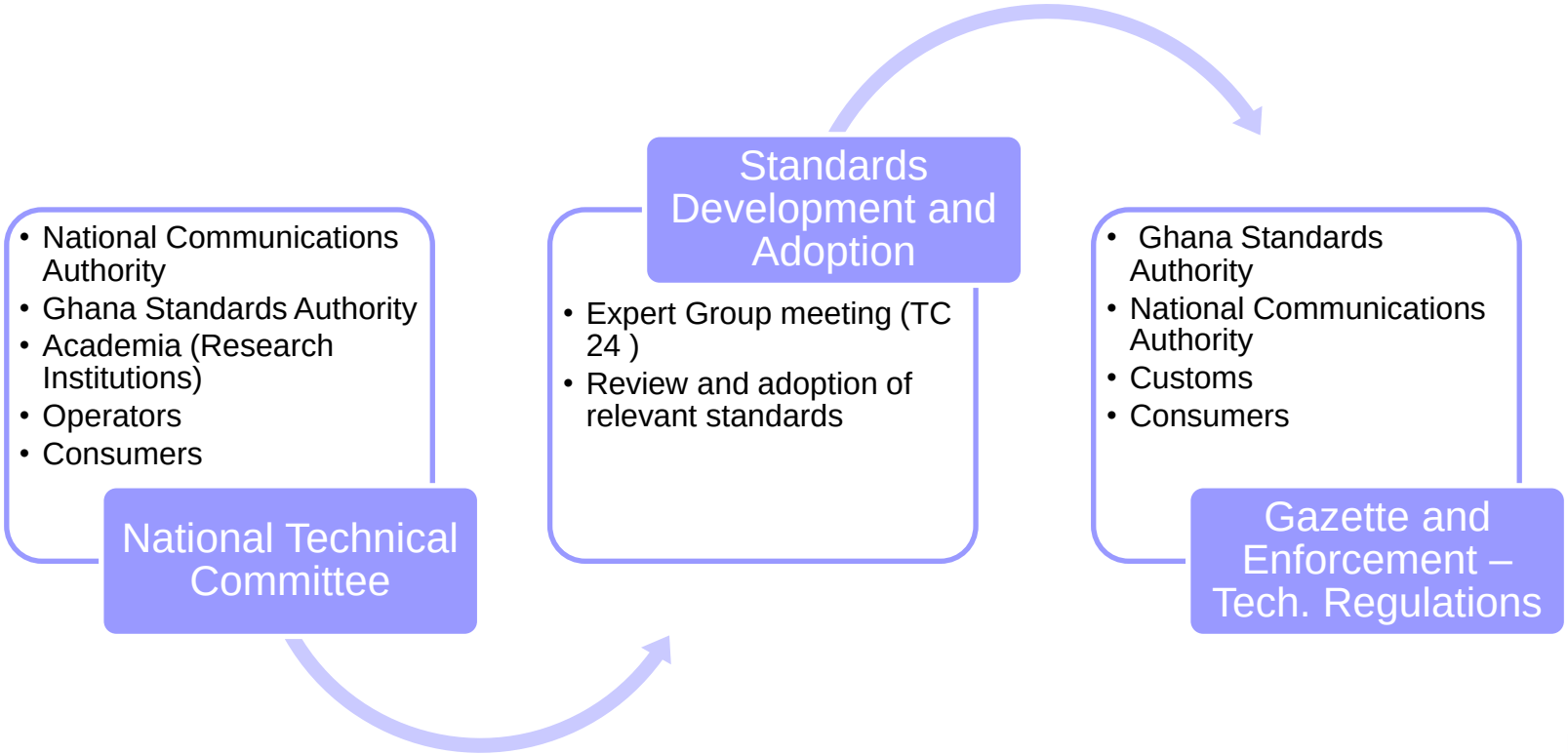
BENEFITS OF STANDARDS:

- Quality
- Safety
- Interoperability
- Reduction of trade barriers



The ICT Standards Setting Process

Electronic Communication Equipment Standards in Ghana are developed by an inter-agency body called National Technical Committee.



Standards Vs. Regulations

STANDARDS	REGULATIONS
Recommendations	Binding legislative enactments
Voluntary use	Use is mandatory – leads to Conformity Assessment Procedures
Approved and published by recognised standardization bodies	Adopted by an Authority
Based on consolidated results of science, technology and experience	Provides Technical Specifications directly or by reference to standards

What is Type Approval?

- An official confirmation by a government or a regulatory body that a manufactured product meets required minimum specifications
- Type Approval is granted to a product that meets a minimum set of regulatory, technical and safety requirements
- Normally, Type Approval is required before a product is allowed to be sold in a particular market; the regulatory requirements for a given product vary around the world

Why Type Approval?

- Health, Safety & Environmental issues
- Electromagnetic Compatibility
- Radio Frequency Spectrum efficiency.
- Network Compatibility & Interoperability
- Quality of Service & Experience
- Consumer Safety
- Checks counterfeit/sub-standard ICT devices

The Technical Requirements

- Minimum requirements that telecommunication network/devices must meet before they are granted Type Approval.
- Such requirements are defined developed or adopted national/International standards.
- Different requirements for EMC, RF, SAR, LVD.

The Technical requirements

- In-band/out-of-band emissions
- Transmission Power
- Frequency stability
- Energy efficiency
- Eco-environmental specifications
- SAR limits
- EMF limits
- Bandwidth
- Gain
- Electrical shock/Fire protection
- Overcurrent protection

As set out by ITU-T,3GPP, ISO, ETSI

The Technical requirements

Category	Product	Standard	Technical Requirement
User equipment	Mobile	3GPP	Power; frequency stability, frequency in-band emission.
	Fiix Telephone	CEI	Power; frequency stability, frequency in-band emission.
	PABX	• Rec. UIT-T G.711. • Rec. UIT-T Q.921.	Protocols
	Charge and power adapter	Rec. UIT-T L.1000	Power, energy efficiency, eco-environment specifications
	Personal area communication	Allocation of national frequencies	Gain, transmission power, bandwidth, frequency stability.
	Residential optical unit	UIT-T G.984	Power; frequency stability, frequency in-band emission, SAR limits.
	UTP cable	ISO/CEI 11801	Return Loss, FEXT, NEXT, bandwidth
RTTE	Mobile - Broadband base station	ETSI	Gain, transmission power, bandwidth.
	AnteNna	ETSI	Radiation Diagram, Gain, VSWR.
	Broadcast transmitter	ETSI	Gain, transmission power, frequency width.
	Earth station equipment / VSAT	ETSI	Gain, transmission power, bandwidth
Network equipment	Transmission equipment	Rec. UIT-T G.707	Protocols
	Network switches and routers.	MPLS - G.8121 Ethernet - G.8021 TVIP - H.62X	Protocols
	Cables	ISO/CEI 11801	Return Loss, FEXT, NEXT, bandwidth
	IPVT	Rec. UIT-T	See Standard
Electromagnetic Compatibility	All equipment	Rec. UIT-T K.48	Radiated spurious emission, conducted spurious emission, resistibility
Safety	All equipment	Rec. UIT-T K.21	Electrical chock protection, fire protection, overcurrent protection

Source; ITU-D

Essential Requirements

NCA Type Approval Guidelines, 2015

Section 6 – General Conditions and Essential Requirements

- 6.1(a) User Protection and Safety
- 6.1(c) Electromagnetic Compatibility
- 6.1 (d) Radio/RF aspects related with the efficient use of the allocated radio spectrum, without causing harmful radio interference

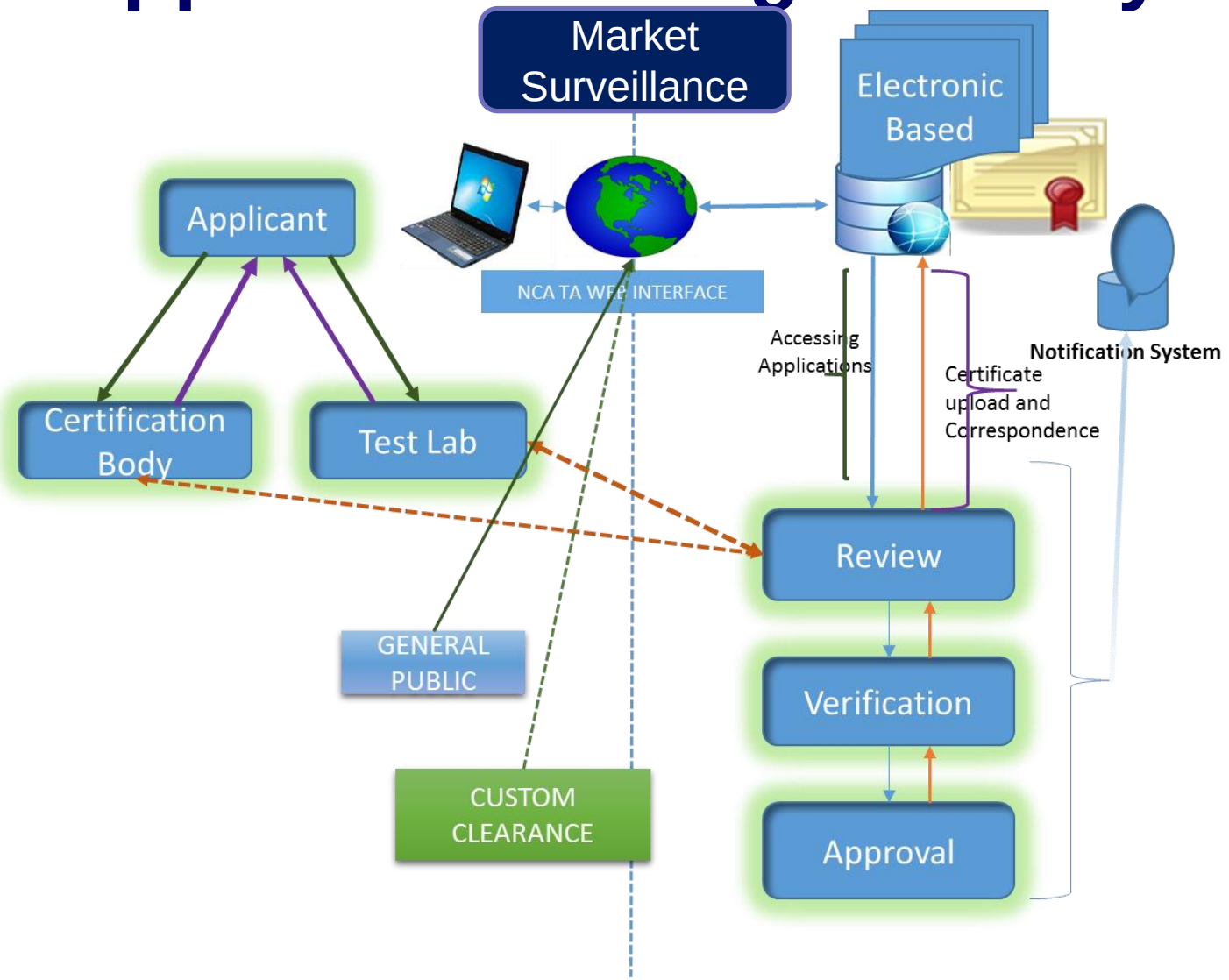
Regulatory Requirements

- Manufacturers, Dealers or Authorized Agents of Electronic Communication Equipment (ECE) require Authorisation and Dealership before they can sell ECE's in Ghana.
- The Authorised Equipment come with Authorisation Certificate (Type Approval Certificate)
- NCA must be informed prior to the importation of any ECE
- Upon arrival of equipment, clearance including physical examination at the ports is required as part of the market surveillance activities

Type Approval & Management System

- **What is it?**
  - An electronic or a web-based application portal for equipment Authorisation: portal.nca.org.gh
  - It is also a search engine for NCA approved equipment

Type approval & Management system



Application Requirements 1/2

- Application Letter on a Company letter head
- RF, EMC and Safety Test Reports in compliance with adopted Standards
- Technical description of equipment
- Certificate of Compliance by Conformity Assessment Body or National regulatory Authority

Application Requirements 2/2

- Technical files including schematics, block diagram component placement and photos
- Power of attorney where applicable
- Sample where required
- Proof of Unique Identifiers (e.g. IMEI, MAC etc..) where applicable
- Proof of payment of Type Approval fees

The Authorisation Certificate

NCA PRODUCT IDENTIFIER: XXX-XX-XXX-XXX

TYPE APPROVAL CERTIFICATE

ISSUED BY

NATIONAL COMMUNICATIONS AUTHORITY

UNDER THE ELECTRONIC COMMUNICATIONS ACT 2008, ACT 775 AND THE ELECTRONIC COMMUNICATIONS REGULATIONS 2011, L.I. 1991

Attention *(Where Available)*: Isaac Boateng **Date of Issue**: 24th May 2016

The National Communications Authority hereby grants this Certificate to

Boateng Incorporated
(Hereinafter called the Certificate Holder)
of
Lane 1 block 2, Kottam Estates, Accra, Ghana

Based on the favourable assessment of the Test Reports and other relevant Documents submitted to the Authority.

This Certificate is ***VALID ONLY*** for the under-mentioned product:

APPROVED PRODUCT TYPE	:	**Tablet Computer**
MODEL NUMBER	:	**bt2016**
BRAND/TRADE NAME	:	**boat**
PRODUCT NAME	:	**boat A1**
FREQUENCY RANGE (WHERE NECESSARY)	:	**GSM 800, DCS 1800, WCDMA Band I,**
EFFECTIVE RADIATED POWER (WHERE NECESSARY)	:	**GSM900:33.80dBm; DCS 1800:31.20dBm WCDMA Band I: 24.22dBm,**

INTENDED USE OF PRODUCT

The device is a Mobile Phone supporting GSM and UMTS to be used for voice and data communication on the above stated frequency Levels

The Certificate Holder is hereby authorized to use or sell the above-mentioned product in the Ghanaian Market directly or through its Licensed dealers or agents. The Certificate Holder must at all times abide by the provisions in the Type Approval Guidelines and other relevant regulations. The same is null and void when the equipment is altered in function and no longer falls within the parameters verified from the accredited Test Lab.

DIRECTOR GENERAL

This Certificate is issued in Pursuant of Section 1(b) of the National Communications Authority Act 2008, Act 769, Section 66 of the Electronic Communications Act 2008, Act 775, Regulations 78-89 of the Electronic Communications Regulations 2011, L.I.1991

PLEASE NOTE: THE MARK "*NCA APPROVED: XXX-XX-XXX-XXX*" MUST BE VISIBLE ON THE PRODUCT PER THE TYPE APPROVAL GUIDELINES

Results: Search for Approved Products

Type Approval:

Back

Product Details

Details of Equipment:	
	
Product Type:	Mobile Phone
Brand Name:	Apple
Model Number:	A1507
NCA Equipment No.:	1X0-7H-0D-013
Product Name:	Apple IPhone 5C
Intended Use:	This device is a Mobile Phone with multimedia functions(music,application support and video)
Additional Details for Radio Equipment:	
Frequency Range:	BT:2402-2480 MHz WIFI:2412-247
RF Output Power Radiation:	23dBm(max)
RF Output Power Conducted:	23dBm(max)
RF Channel Spacing:	1/5/20/40 MHz
RF Output Impedance:	
Type Of Modulation:	GFSK, pi/4-DQPSK,8DPSK,GMSK,QP
Bandwidth:	1/5/20/40 MHz
Software Version:	IOS 7.0.1
Antenna Type:	Internal
Antenna Gain:	1.31 dBi
Technical Variants:	NA
Details of Certificate of Compliance:	
Issuing Body:	CETECOM ICT services GmbH
Issuing Date:	09/03/2013
Validity:	Indefinitely
Standards:	
EMC:	EN 301 511 v.9.0.2, EN 301 908-1 v5.2.1 EN 301 908-2 v5.2.1, EN 301 908-13 v5.2.1
Radio:	EN 301 511 v.9.0.2, EN 301 908-1 v5.2.1 EN 301 908-2 v5.2.1, EN 301 908-13 v5.2.1 EN 300 440-2 v1.6.1, EN 300 440-2 v1.4.1 EN 300 328 v1.7.1, EN 301 893 v1.7.1 EN 301 489-7 v1.3.1 EN 301 489-17 v2.2.1, EN 301 489-24 v1.5.1
Health And Safety:	EN 50360:2001 & EN 62311:2008, (IEC 62209-1:2005, IEC 62209-2:2010) EN 60950-1:2006+A1:2010+A11:2009+A12:2011 IEC 60950-1:2005(2nd Ed)+ A1:2009
Manufacture's Information:	
Name Of Manufacturer:	Apple Inc.
Address Of Manufacturer:	1 Infinite Loop,Cupertino,CA 95014, California, USA

Proxy & Administrative Approvals

- Third Party Approvals for entities on behalf of the manufacturers. E.g. Registered Dealers, Large scale corporate deployment (Use).

- Mainly Administrative based on test reports from laboratories recognized by the NCA.

Self Declaration of Conformity

- A Supplier's Declaration of Conformity (SDOC; also sometimes called Self Declaration of Conformity) is one way to show that a product, process or service conforms to a standard or technical regulation, in which **a supplier provides written assurance of conformity to the specified requirements** (Source: NIST)

- In addition to the technical standards provided, the rules governing the service may require that such equipment be authorized under a Supplier's Declaration of Conformity, or receive a grant of Certification.

Self Declaration of Conformity

SDoc under the FCC:

- To apply the SDoC procedure, the responsible party **must be located in the United States**.

- Alternatively, a responsible party may apply the Certification procedure utilizing a Telecommunication Certification Body if they so choose, such as when they have no US Presence or representation or simply wish to apply an FCC ID to the product.

The following items are prepared by the responsible party;

- "Compliance Information Statement", which include the product literature.
- label for the unit that uniquely identifies it and optionally, apply FCC logo.
- Include mandatory user's manual information regarding the interference potential of the device.

Self Declaration of Conformity

SDoc under the FCC:

Compliance Information Statement:

(Include in user's manual or separate sheet)

- **IDENTIFICATION OF PRODUCT:** (e.g. unique name and model number)
- **APPLICABLE COMPLIANCE STATEMENTS:** (e.g. for part 15 devices)
- **RESPONSIBLE PARTY (IN USA) NAME:** *Manufacturer, assembler, importer, or retailer
- **ADDRESS:**
- **TELEPHONE:**
- **or INTERNET CONTACT INFORMATION**
- Responsible party must be located in the United States. An Internet contact can be provided in the place of address and telephone number.

Self Declaration of Conformity

SDoc under the FCC:

Compliance Information Statement:

For products assembled from modular components that are themselves SDoC or Certified

- **IDENTIFICATION OF ASSEMBLED PRODUCT:** (e.g. unique name and model number)
- **IDENTIFICATION OF MODULAR COMPONENTS USED:** (e.g. As identified on it's SDoC, or Name and Model and FCC ID if certified)
- **APPLICABLE COMPLIANCE STATEMENTS:** (e.g. for part 15 devices)
- **RESPONSIBLE PARTY THAT ASSEMBLED PRODUCT (IN USA)**
  NAME: *Manufacturer, assembler, importer, or retailer
- **ADDRESS:**
- **TELEPHONE:**
- **or INTERNET CONTACT INFORMATION**
- **COPIES OF COMPLIANCE STATEMENT FOR EACH SDoC MODULAR COMPONENT USED**

Self Declaration of Conformity

- Each device shall be uniquely identified by the responsible party. The identification shall not be in a format that could be confused with the FCC ID required on certified equipment. The responsible party shall maintain records to facilitate the positive identification of each device.

- Devices subject to authorization under Supplier's Declaration of Conformity may be labeled with the following logo on a voluntary basis as a visual indication that the product complies with the applicable FCC requirements.

The use of the logo on the device does not alleviate the requirement to provide the required compliance information.

Mutual Recognition Agreements (MRAs)

Purpose:

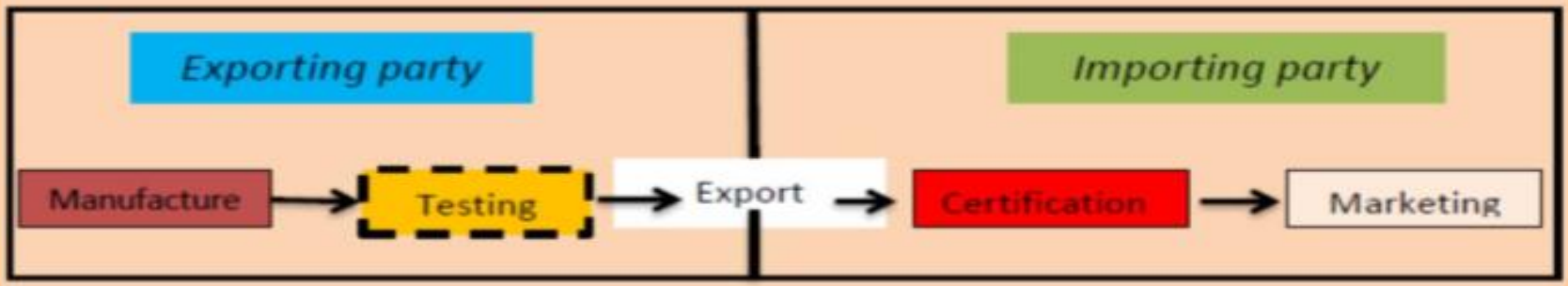
Facilitate trade by allowing Conformity Assessment Bodies (CAB) or Regulators in one economy to test (one part) and/or certify (another part) of products to the Technical Regulations of another economy.

Parties to an MRA mutually agree to accept:

- Test results
- Product approval

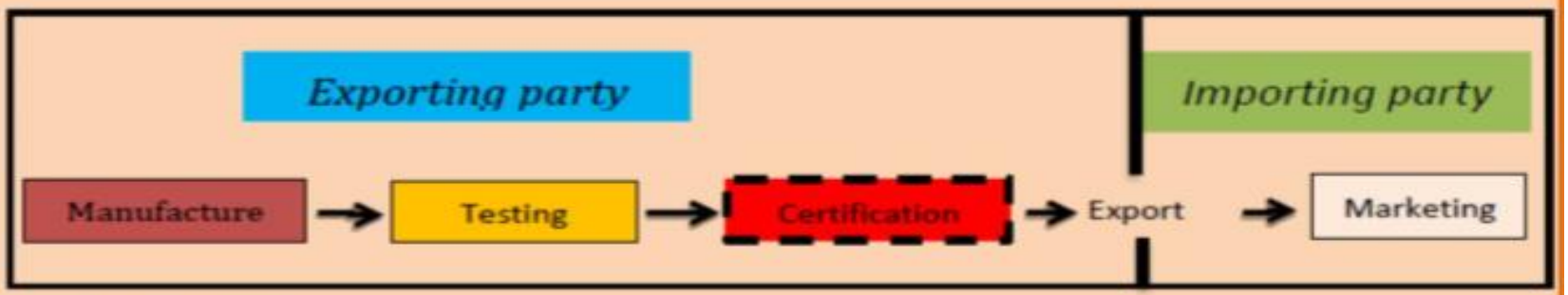
Implementation of an MRA

Figure 4: Phase 1 – Mutual acceptance of test reports



Source: Andrew Kwan

Figure 5: Phase 2 – Mutual acceptance of certification



Source: Andrew Kwan

Thank you.

Any Questions?