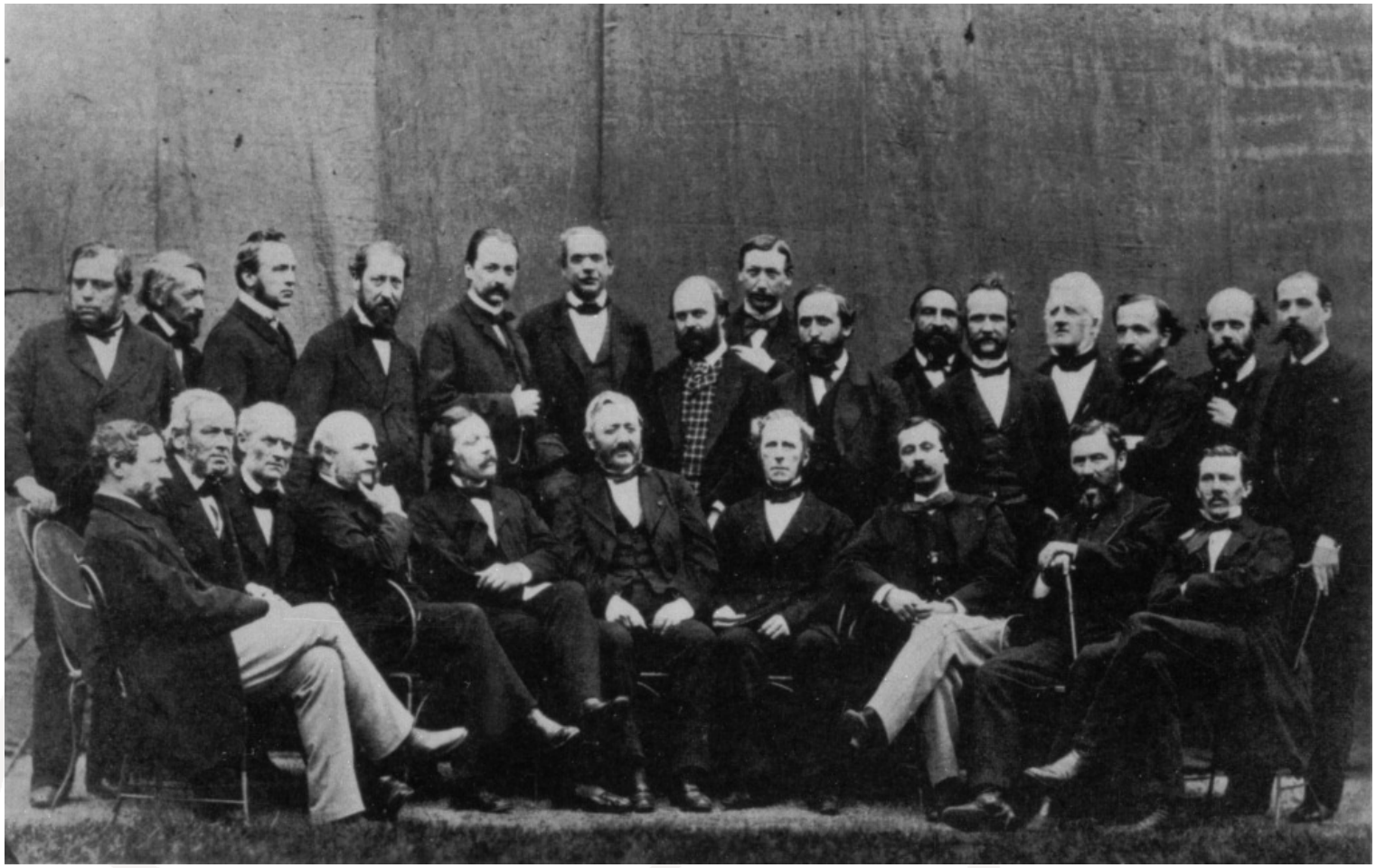
ITU Conformity and Interoperability
- Guidelines -

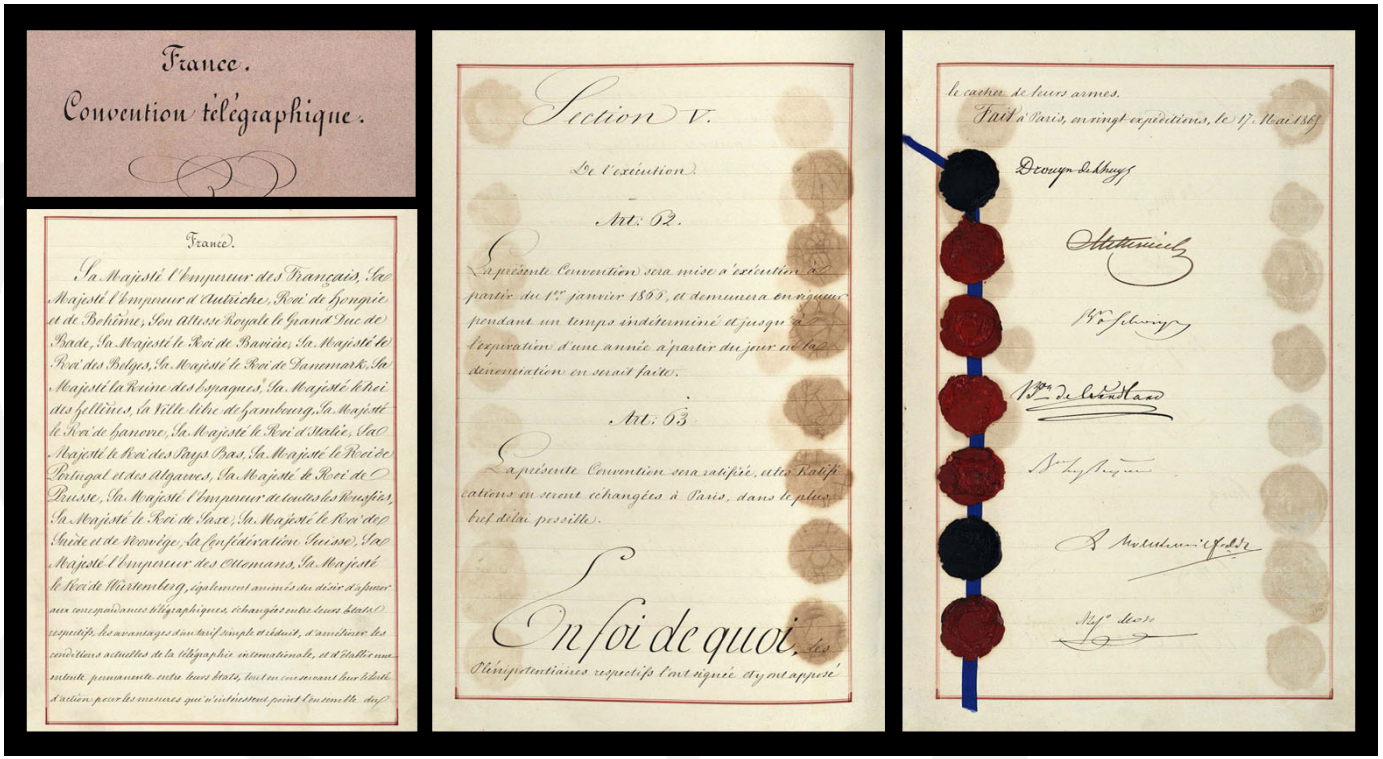
Australian Communications and Media Authority

ACMA ITU International Training Program 2014

23-25 July 2014, Sydney, Australia



17 May 1865



"Where lines crossed national borders, messages had to be stopped and translated into the particular system of the next jurisdiction.To simplify matters, regional agreements began to be forged, and in Europe, representatives of 20 States gathered in Paris at an International Telegraph Conference to find ways to overcome barriers and make services more efficient. They would create a framework to standardize telegraphy equipment, set uniform operating instructions, and lay down common international tariff and accounting rules."

ITU C&I Programme

Key activities and main ITU outcomes which are related to the implementation of ITU C&I Programme (Pillar 1 and 2)

The Business Plan for the ITU C&I Programme in 4 "Pillars"

The Standardization Sector side

- Pillar 1: Conformity Assessment
- Pillar 2: Interoperability Events

The Development Sector side

- Pillar 3: Capacity building
- Pillar 4: Establishment of test centres and C&I programmes in developing countries

Authority for Action: ITU's highest decision making bodies

Resolution 76: ITU World Telecommunication Standardization Assembly (WTSA-12)

Resolution 47: ITU World Telecommunication Development Conference (WTDC-14)

Resolution 177: ITU Plenipotentiary Conference (PP-10)

Resolution 62: Radiocommunication Assembly 2012

Council Decisions: (2009, 2010, 2011, 2012, 2013, 2014)

WTSA-12

WTSA-12 designated the ITU-T Study Group 11 as a lead group on test specifications, conformance and interoperability testing which coordinates ITU-T activities related to the ITU C&I programme across all SGs and review the recommendations in the Conformance and Interoperability Business Plan for the long term implementation of the C&I programme

Council-12

C12/48

- ITU-T to run a pilot of the conformity assessment programme for key technologies
- ITU-T study groups to identify further technologies *(ITU-T Recommendations)* for C&I
- ITU Secretariat invite labs/forums/consortia/SDOs to join the C&I Programme
- ITU Secretariat to consult study groups towards identifying and suggesting topics for future events
- ITU-T Study Groups to develop system roadmaps, identify and define the interfaces across which interoperability is needed
- ITU-T Study Groups should identify or develop use cases, application profiles and test plans to use for interoperability testing for Recommendations

The key outcomes related to Pillar 1&2 as of June 2014 (1/2)

- ✓ ITU-T SG11 developed a **living list of key technologies** suitable for C&I (http://itu.int/go/key-technologies)
- ✓ ITU-T SG11 launched the **list of pilot projects** of conformity assessment (http://www.itu.int/go/pilot-projects)
- ✓ ITU-T SG11 maintains the **C&I reference table of ITU-T Recs.** (http://itu.int/go/reference-table)
- ✓ ITU-T SG11 established the new work item **Q.TL-rec-pro** **"Testing Laboratories recognition procedure"** (Nov. 13)
- ✓ ITU-T SG11 established the **CG on collaboration between ITU and TL** (Nov. 13)
- ✓ ITU secretariat cooperated with the relevant SDOs (ISO, IECEE, DCMAS, ILAC, IAF, etc.)

The key outcomes related to Pillar 1&2 as of June 2014 (2/2)

- ✓ **ITU conducted test events** (e.g. from 2013 to 2014):
  - ✓ Conformance & Interoperability event of IMS UNI, IPTV (Bangkok, Sept. 13)
  - ✓ Continua Health Alliance Interoperability event on e-health (Geneva, Oct. 13)
  - ✓ Performance assessment of mobile phones in conjunction with HFT in a car against Recs. ITU-T P.1100/P.1110 (May. 14)
  - ✓ Interoperability of IMS-NNI, IoT (Aug. 14) (planned)
- ✓ ITU-T SG11 established the new work item **Q.Int_speed_test** **"Unified methodology of Internet speed quality measurement usable by end-users on the fixed and mobile networks"**
- ✓ There are available some new test specifications for **IMS-NNI, benchmarking, NGN-UNI**, etc.
- ✓ JCA-CIT extended the list of conformity assessment approaches

ITU-T C&I Portal

http://www.itu.int/en/ITU-T/C-I/Pages/default.aspx

ITU Conformity and Interoperability Portal

YOU ARE HERE HOME > ITU-T > ITU CONFORMITY AND INTEROPERABILITY

SHARE

- The living list of technologies to be tested on C&I
- List of Pilot projects for conformity assessment against ITU-T Recs
- The reference table of standards are used for C&I assessment
- SG11 Action plan on C&I
- ITU-T meeting schedules on C&I activities

ITU C&I Task Force

One of the core objectives of international standardization is to enable the global interoperability of ICT networks and devices. Products developed in accordance with ITU standards (ITU-T Recommendations) should provide the interoperability needed for users of these products to make use of them anywhere in the world, regardless of who has manufactured them and who is offering the service.

ITU created the Conformity and Interoperability (C&I) Programme in response to a request from the ITU membership to ensure the conformance and interoperability of ICT products implemented according to ITU-T Recommendations or part thereof.

The Programme is also aimed at soliciting feedback to improve the quality of ITU-T Recommendations and at reducing the digital divide and the Standardization Gap by providing developing countries with the requisite tools and expertise to establish regional C&I test centres.

News | Databases | Baseline Documents

Press Release: Test event finds mobile phones have poor hands-free performance

12-16 May: Leading car makers to test hands-free systems to ITU standards

ITU hosts testing event for hands-free in car systems

Call for Expression of Interest

Milestones reached in ITU Conformity and Interoperability programme

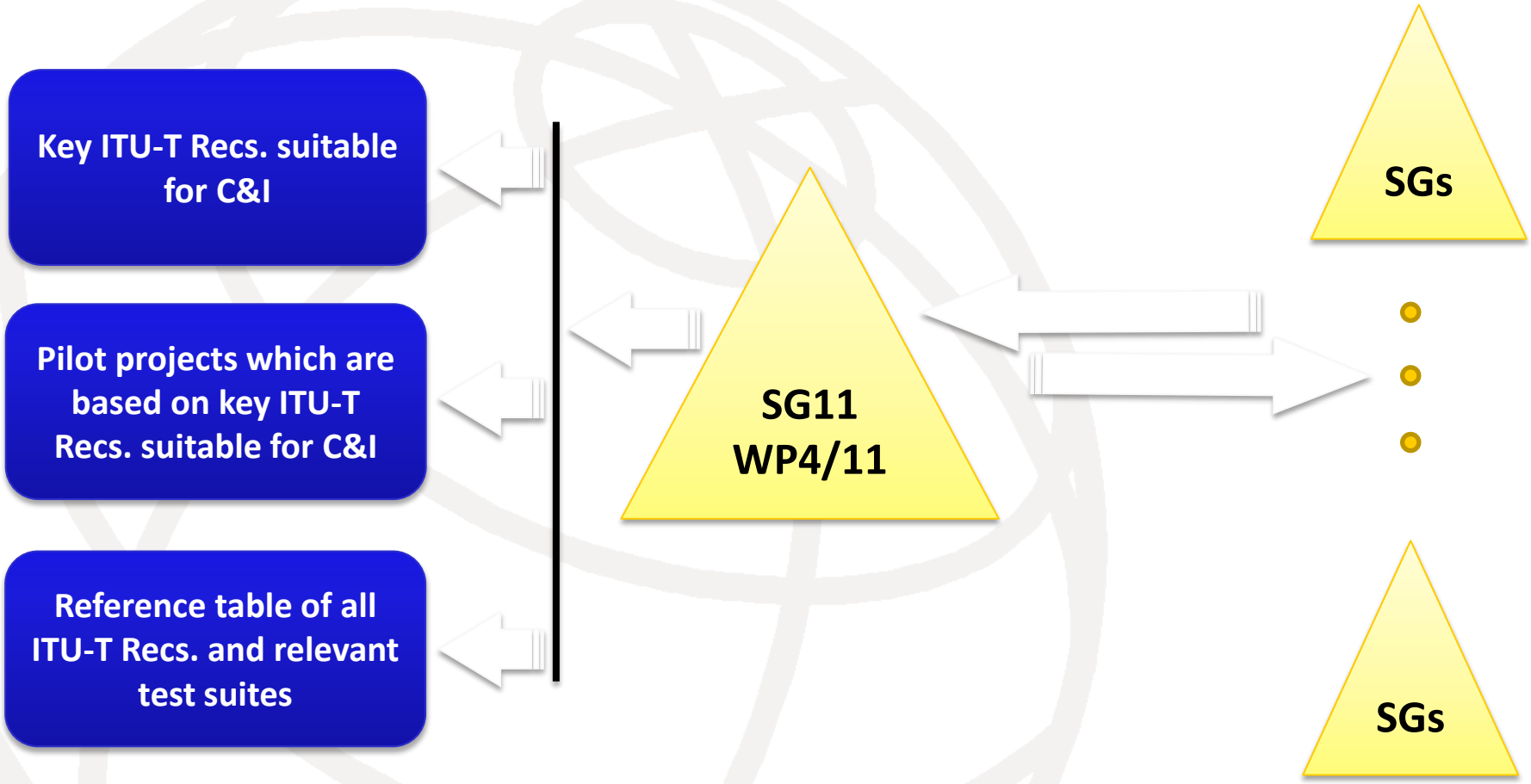
More ›
Archives ›

QUICK LINKS

- C&I Portal home page
- JCA-CIT
- ITU-T SG11 (lead group on testing)
- BDT C&I Activities
- ITU Conformity Database (application form)
- ITU Promotional materials
- ITU Pilot Conformity Database (TSB Circular 98)

ITU C&I Programme. Key activities and main ITU outcomes which are related to the implementation of ITU C&I Programme (Pillar 1 and 2)

SG11 Action plan
Principles of SG11 cooperation among other SGs



The list of key Technologies for C&I (1/2)

The living list of Recommendations and related specifications within key technologies suitable for C&I testing

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ITU-T SG11 output document:

TD 371 (GEN/11) (9-16 July 2014)

#	Title	Focal Point	Other SDOs	ITU-T SGs	References to SDOs docs	References to ITU-T Recs.
1	NGN Functionality	Martin Brand Vice-chairman of SG11 (Austria) martin.brand@A1telekom.at Andrey Koucheryavy (Russia) akouch@mail.ru Dmitry Tarasov (Russia) tarasov@zniis.ru	ETSI	SG11	ETSI (Requirements) - - - ETSI (Test suites) - -	ITU (Requirements) Y.2201 Y.2012 Q.3909 ITU (Test suites) Q.3900 Q.3901
2	Functions of broadband network as a part of NGN	Dmitry Tarasov (Russia) tarasov@zniis.ru	-	SG11	-	ITU (Requirements) Y.2012 ITU (Test suites) Q.3906.1
3	IMS architecture, signalling protocols, interfaces	Martin Brand Vice-chairman of SG11 (Austria) martin.brand@A1telekom.at	ETSI/3GPP	SG11	ETSI (Requirements) TS 124 228 TS 124 229 TS 124 238 TS 124 428	ITU (Requirements) - - - -

The list of key Technologies for C&I (2 / 2)

http://itu.int/go/key-technologies

Network and equipment performance (benchmarking) – Req: Draft Q.39zz-1; TS:Q.3930, Q.3931.1-4, Q.3932.1-4,

QoS/QOE/NP – Req: Q.3925, Y.1541, Y.1542, Y.1543, draft Q.MSPQuality, Q.NP-req; TS:Q.QMS, Q.3930, Q.3931.1, Q.3931.2

NGN Functionality – Req: Y.2201, Y.2012; TS: Q.3909; TS: Q.3900; Q.3901

Functions of broadband network as a part of NGN – Req: Y.2012; TS: Q.3906.1

IMS architecture, signaling protocols, interfaces – Req: Y.2012; TS: Q.3904

IMS basic call – Protocol conformance testing – Req: Draft Q.39xx-1; TS: Q.3904

IMS supplementary services. Protocol specifications – Req: -; TS: Q.3943.1/2/4, Q.3942.1

IMS interconnection – Re: Q.3401; TS: -

Interoperability testing – Req: - ; TS: Q.3940, Q.3941.1-4

NGN monitoring system – Req: Q.3902, Q.3910, Q.3911, Q.3912; TS: -

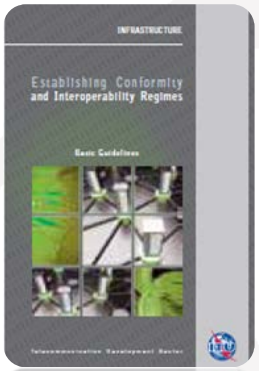
Interworking of signaling protocols of NGN – Req: Q.1912.5, Q.3401, Q.3402; TS: Q.1912.5 B-F

RFID – Req: - ; TS: Q.3950

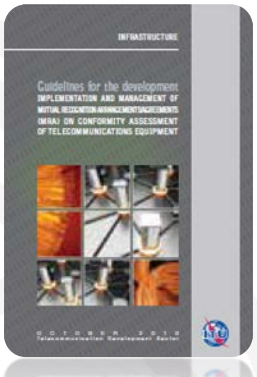
Internet speed access – Req: - ; TS: Q.InSpMs

Internet Access as perceived by user – Req: G.1000; TS: -

C&I Guidelines

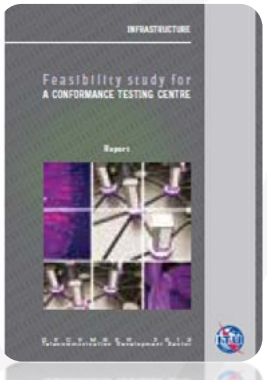


Establishing Conformity and Interoperability Regimes – Basic Guidelines



Guidelines for the development, implementation and management of mutual recognition arrangements/agreements (MRAs) on conformity assessment

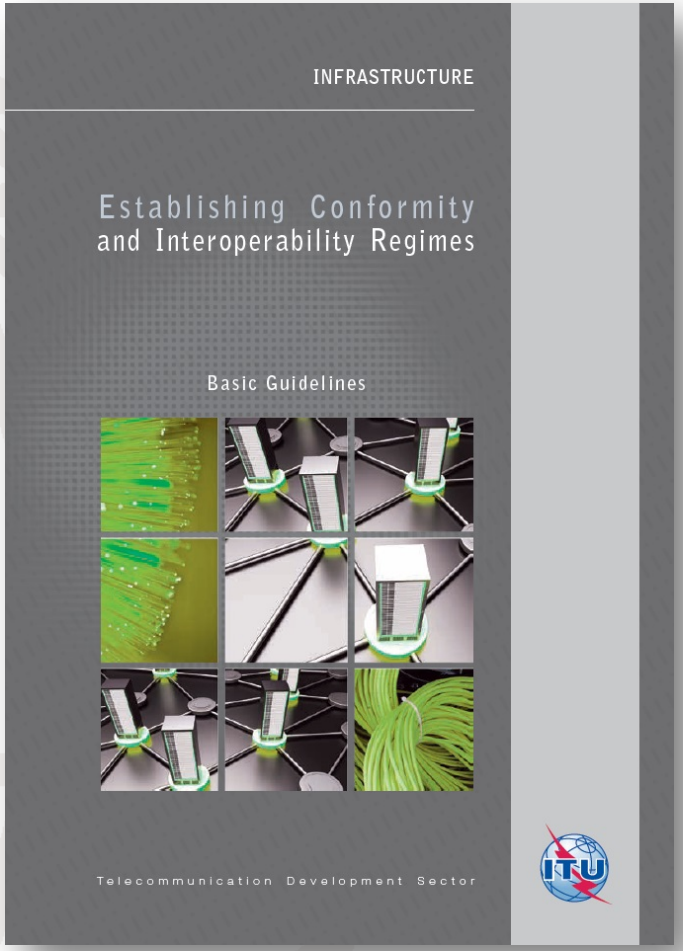
Guidelines for developing countries on Establishing Conformity assessment Test Labs in Different Regions



Feasibility Study for the establishment of a Conformity Testing Centre

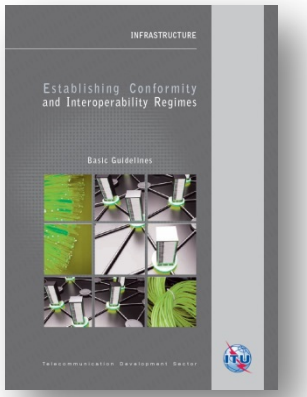
Establishing Conformity and Interoperability Regimes

Basic Guidelines



Guidelines here

Content



1. Introduction
2. Definitions
3. Development and review of regulatory framework and roadmap for the establishment of C&I regimes
4. Definition and publication of ICT reference standards
5. Accreditation, recognition and acceptance of laboratories and qualified professional

Conformity – different perspectives

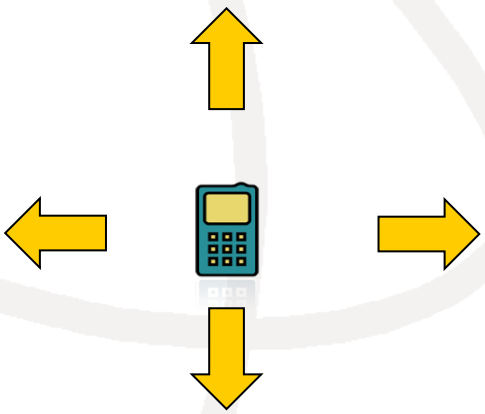
- Service providers and operators specify standards and specifications for equipment and systems which they employ to provide services to their customers.
- National regulators mandate regulations, standards and specifications for equipment and systems which are deployed and used in their territories.
- Users of the equipment and systems along with the service providers and national regulators require evidence and proof that the equipment and systems conform to the appropriate standards and specifications and to the extent that they interoperate with each other as specified.
- The process used to obtain the evidence and proof is called conformity assessment – the demonstration that specified requirements relating to a product, process, system, person or body are fulfilled

Conformance of ICT equipment and systems to standards and homologation process

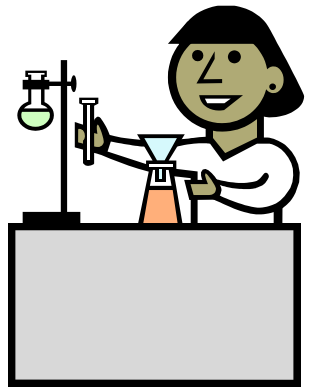
National Rules	Regional Rules	International Rules
• A • B • C, ..	• X • Y • Z,..	• Interoperab. • EMC • Etc.

Regulator and Conformance Assessment of ICT equipment

- Laws
- Regulations
- Safety of users
- Interoperability
- Competition
- Limited resources

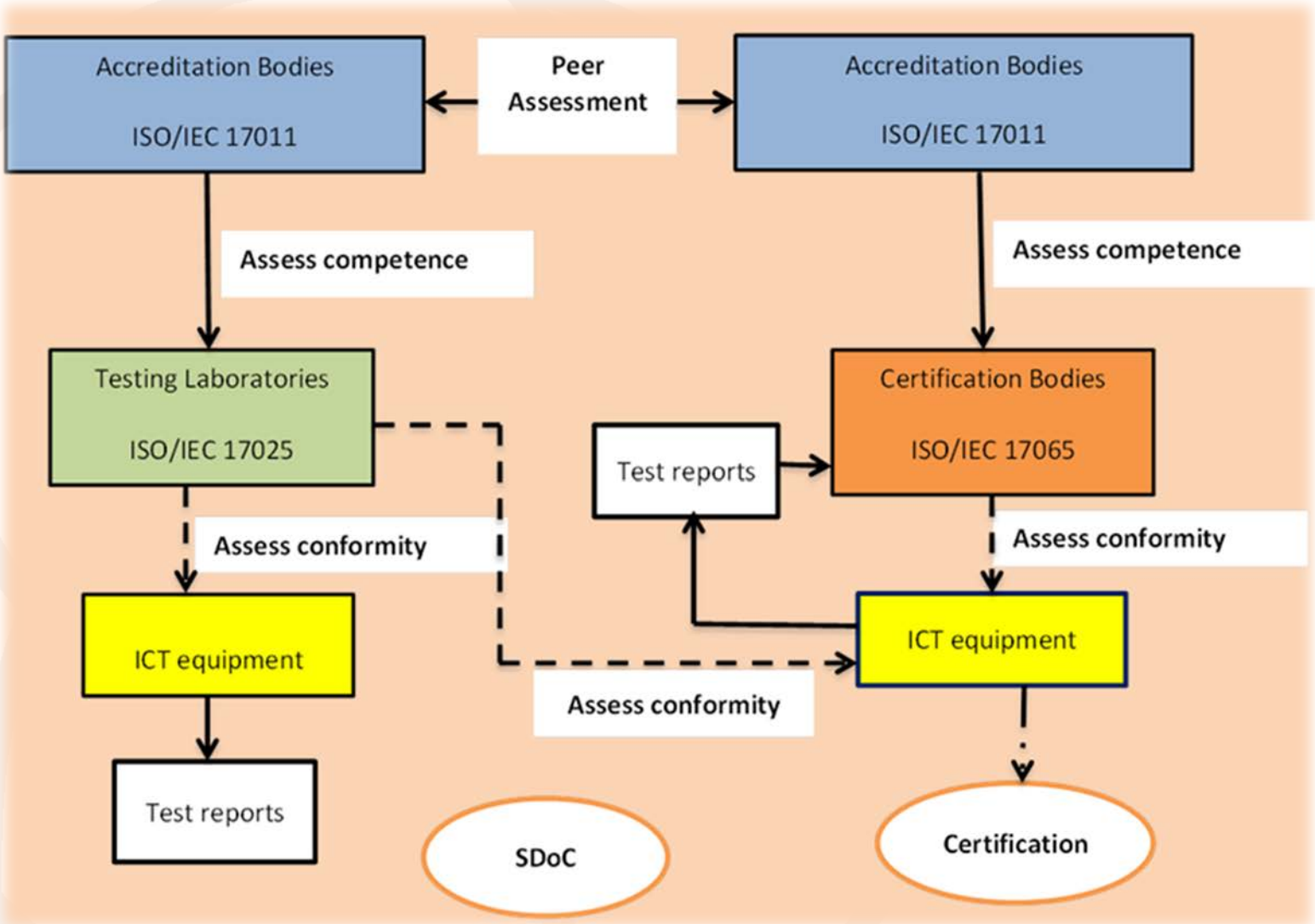


ICT - Global market (users)



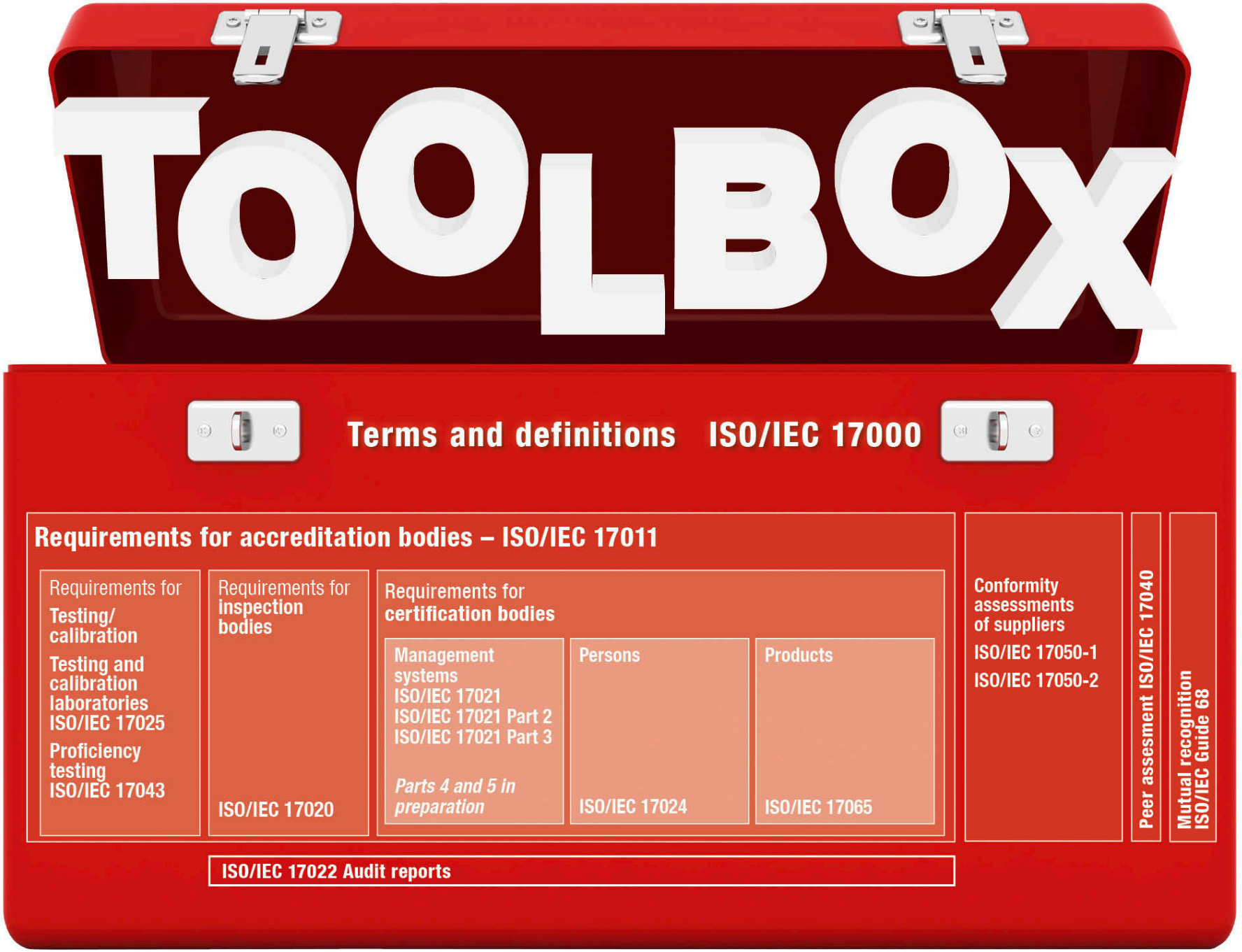
Evaluation
(conformance assessment)

Conformity Assessment Regimes



ITU/IEC 17000 Series
- Conformity Assessment -

- 17000:2004– Vocabulary and general principles
- 17001:2005– Impartiality – Principles and requirements
- 17002:2004– Confidentiality – Principles and requirements
- 17003:2004– Complaints and appeals – Principles and requirements
- 17004:2005– Disclosure of Information – Principles and requirements
- 17005:2008– Use of Management systems – Principles and requirements
- 17007:2009– Guidelines for drafting normative documents suitable for use for conformity assessment
- 17011:2004– Requirements for accreditation bodies accrediting conformity assessment bodies
- 17020:2012– Requirements for the operation of various types of bodies performing inspection
- 17021:2011– Requirements for bodies providing audit and certification of management systems
- 17024:2012– General requirements for bodies operating certification of persons
- 17025:2005– General requirements for the competence of testing and calibration laboratories
- 17030:2003– General requirements for third-party marks of conformity
- 17040:2005– General requirements for peer assessment of conformity assessment bodies and accreditation bodies
- 17043:2005– General requirements for proficiency testing
- 17050-1:2007– Supplier's declaration of conformity – Part 1: General requirements
- 17050-2:2007– Supplier's declaration of conformity – Part 2: Supporting document
- 17065:2012– Requirements for bodies certifying products, processes and services
- 17067:2013– Fundamentals of product certification and guidelines for product certification schemes



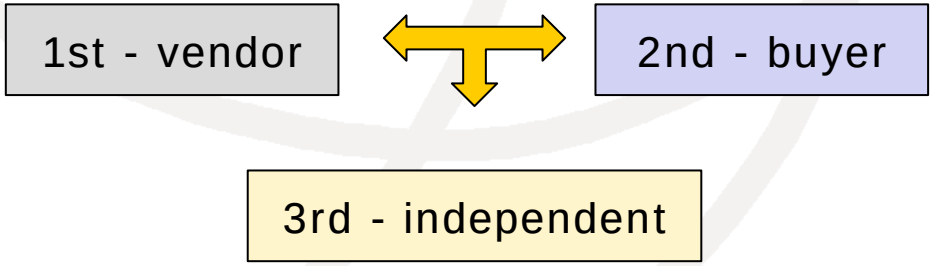
Toolbox: Conformance Assessment; Source: ISO

Definitions (1)

- Applicant - is the manufacturer or representative interested in selling the product in the concerned market (country/region).
- Certification - is the type approval process in which a Certification Body states, through the Certificate of Conformity, that a product fulfills the specified requirements.
- Certificate of Conformity - is a statement of conformity issued by a Certification Body.
- Declaration of Conformity - is a statement of conformity issued by a party (vendor) or a 2nd party (buyer, e.g. telecom operator).

Definitions (2)

- Conformity Assessment – demonstration that specified requirements related to a product, process, system, person or bode are fulfilled.
- Homologation - official act issued by the Regulatory Authority that empowers the applicant to sell the ICT product in the concerned market.
- First party - supplier of a product (vendor).
- Second party - the purchaser of a product (telecom operator).
- Third party - a person or body that is independent of the organization that provides the product, and of the user interested in the product.



Definitions (3)

Supplier Declaration of Conformity (SDoC)

- Supplier Declaration of Conformity (SDoC) is the conformity assessment scheme used for low risk and mature products.
- Upon meeting a set of conditions, a supplier can self-declare that the equipment conforms to the appropriate requirements.
- There are four different schemes of SDoC (next slide)

Definitions (4)

Supplier Declaration of Conformity (SDoC)

SDoC I

- testing of the equipment to be performed by an ISO/IEC 17025 compliant testing laboratory that is recognized by the regulator;
- test reports have to be kept for a prescribed period;
- supplier has to register the declaration with the regulator

SDoC II

- testing of the equipment to be performed by an ISO/IEC 17025 compliant testing laboratory that is recognized by the regulator;
- test reports have to be kept for a prescribed period;
- supplier does not have to register the declaration with the regulator

SDoC III

- testing of the equipment to be performed by a testing laboratory;
- test reports have to be kept for a prescribed period;
- supplier has to register the declaration with the regulator.

SDoC IV

- testing of the equipment to be performed by a testing laboratory;
- test reports have to be kept for a prescribed period.

Regulatory framework and roadmap for the establishment of conformity and interoperability regimes

- A telecommunication act reflects the policy of the sovereign state in question and can include a clear statement 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;
- 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.
- Investigation and enforcement:
  - administrative and monetary penalties;
  - inspection and market surveillance;
  - civil liability

Conformance Assessment Procedures

Procedures for establishing a conformance assessment regime may include the following procedures:

A. Query for new products to be homologated

B. Issuing and/or validating a Certificate of Conformity

C. Issue of the Homologation (or acceptance)

D. Import procedures for testing proposals

E. Reference Standards for conformity assessment

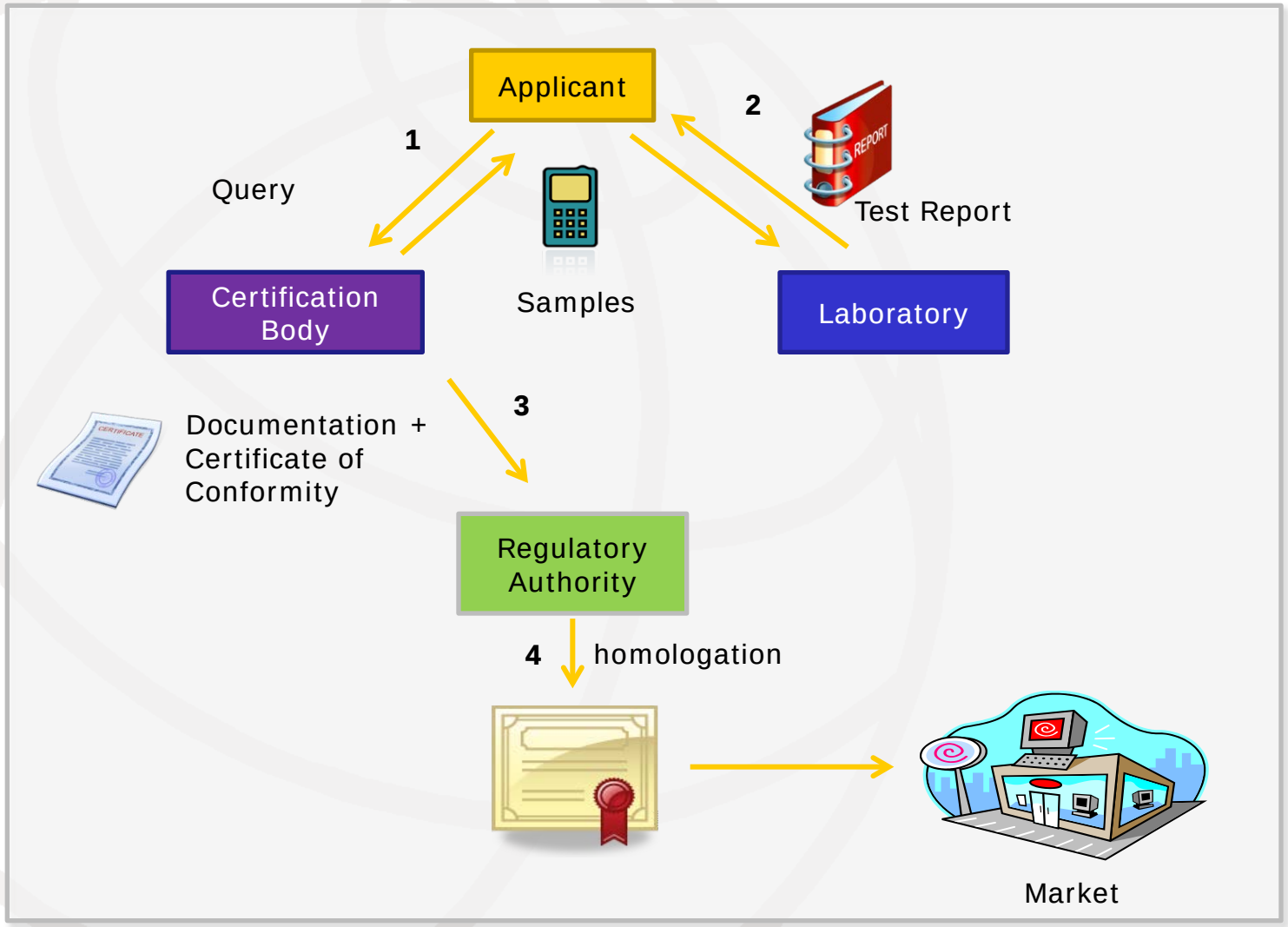
F. Recognized Laboratories and Test Reports

G. Marking

H. Monitoring, Enforcement, and Sanctions and Post-Market Surveillance

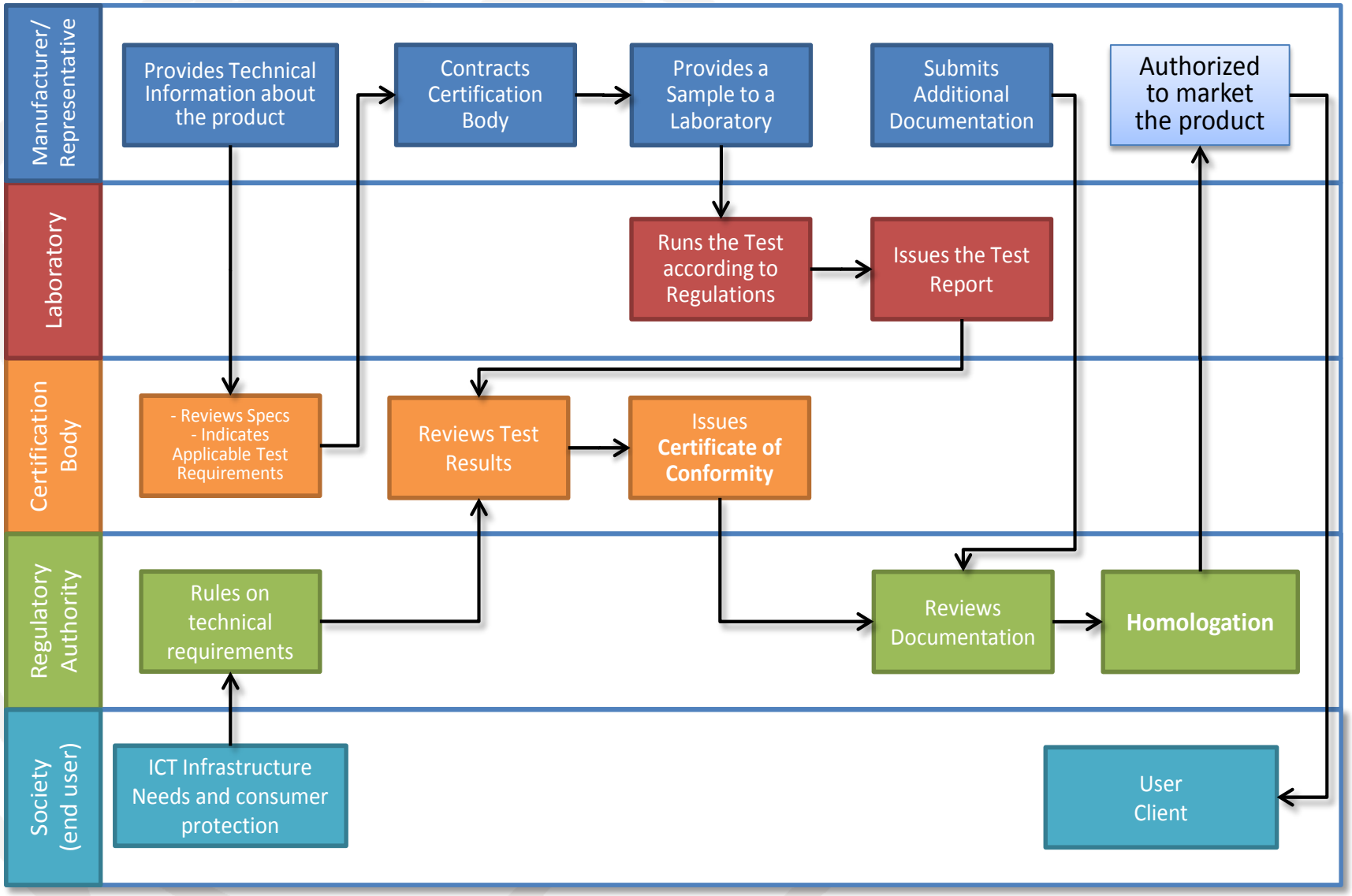
Regulatory Aspects – Conformance assessment procedures

Example of interactions that may exist among the entities participating in a conformity assessment process that uses certification mechanism:



Procedures for Establishing Conformity Assessment Regimes (cont.)

Another example of interactions that may exist among the entities participating in the conformity assessment process



Conformance Assessment Procedures

- Fees
  - Assessment and reassessment fee
  - Technical expertise fee
  - Listing fees
  - Registration fees
  - Payment of fees

Definition and publication of ICT reference standards for conformity assessment of ICT equipment

- Sub-category of equipment has specific mandatory technical specifications as part of the regulatory requirements which must be met in order to be deployed in the marketplace

- These standards are developed primarily in accordance with decisions made and ratified in the International Telecommunication Union (ITU), International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) combined with regional, national and industry standards requirements and are therefore a complex and very complete set of requirements which are vitally important to an interference free and safe environment for ICT products:

Definition and publication of ICT reference standards for conformity assessment of ICT equipment

- A number of regional standards bodies serving specific regional policies, regulations and requirements are heavily engaged in development and promulgation of the product standards and include the European Telecommunications Standards Institute, USA Telecommunications Industry Association, and various important forums and consortia such as 3GPP

Definition and publication of ICT reference standards for conformity assessment of ICT equipment

- The process to arrive at many of these equipment standards and specifications, especially in the radiocommunication equipment side stems primarily from basic work of the ITU membership at the World Radiocommunication Conferences (WRCs) where decisions are made regarding what services are to be defined in specific frequency bands.

- This in turn guides national and regional decisions on determining their frequency band plans for various services including broadcast and other radiocommunication services and usage. Following this, frequency band plan guides are developed for national and regional frequency allocations, known as standard radio system plans

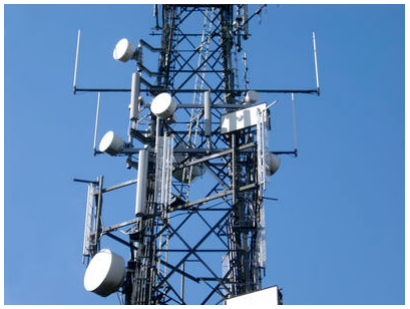
Definition and publication of ICT reference standards for conformity assessment of ICT equipment

The next table gives and example examples of international standards, regional standards and forum and consortia standards used by some countries...

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

Definition and publication of ICT reference standards for conformity assessment of ICT equipment

Another example of how these kinds of standards are structured in a particular Member State (in this case Canada)



Broadcasting equipment standards

- Broadcasting Equipment Technical Standards (BETS)
- Broadcasting Specifications and Standards (BTS & BS)
- Broadcasting Certificate Exempt Radio Apparatus List

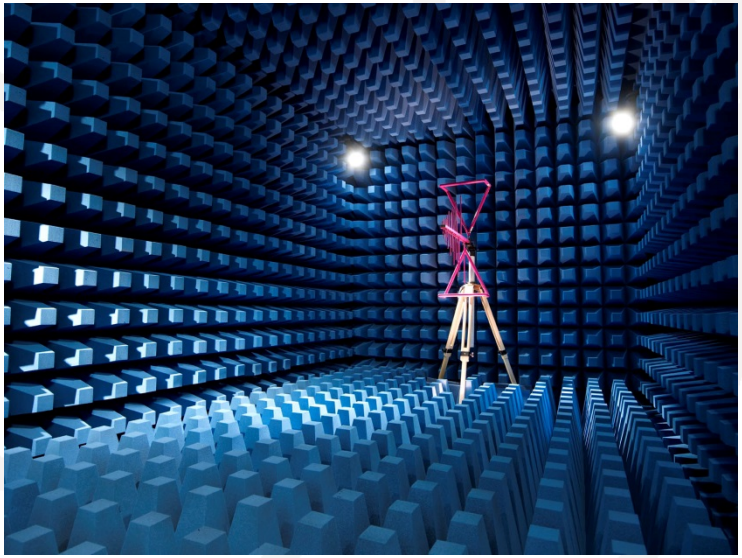
Radio equipment standards

- Radio Standards Specifications (RSS)
- Category I Equipment Standards List (user's terminals)
- Category II Equipment Standards List (operator's terminals)
- License-exempt Radio Apparatus Standards List
- Regulatory Standards Notice

Definition and publication of ICT reference standards for conformity assessment of ICT equipment

Electromagnetic compatibility standards

The following series of standards are largely adopted or adapted from the CISPR (International Special Committee on Radio Interferences) and ITU standards, covering testing procedures such as radiated emissions, conducted emissions, immunity and resistibility.

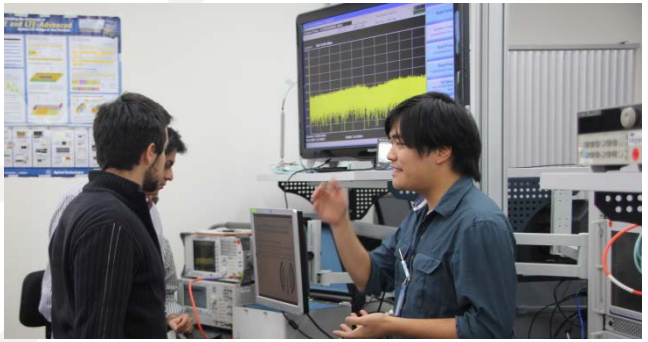


Definition and publication of ICT reference standards for conformity assessment of ICT equipment

Terminal equipment: Technical specifications / standards list

In some countries the standard provides technical requirements for:

- connection of terminal equipment to public networks
- hearing aid compatibility with handsets.
- compliance specifications for terminal equipment, terminal systems and network protection devices



Definition and publication of ICT reference standards for conformity assessment of ICT equipment

Specific absorption rate (SAR)

Specialized measurement systems have been developed to permit determination of the SAR value of a given product or system in order to assess compliance with the definitions of limits set by different SDOs (e.g. IRCNIRP)

Consideration of WTO rules on TBT

The World Trade Organization (WTO) is the international organization whose primary purpose is to open trade for the benefit of all

The WTO Agreement on Technical Barriers to Trade (TBT) tries to ensure that regulations, standards, testing and certification procedures do not create unnecessary obstacles, while also providing members with the right to implement measures to achieve legitimate policy objectives, such as the protection of human health and safety, or the environment

The principles of the TBT agreement are as follows:

(1) Avoidance of unnecessary obstacles to trade;
(2) Non-discrimination and national treatment;
(3) Harmonization;
(4) Equivalence of technical regulations;
(5) Mutual recognition of conformity assessment procedures; and
(6) Transparency.

List of ICT equipment requiring conformity assessment

- Examples:

Types of Equipments

Radio apparatus: A device or combination of devices intended for, or capable of being used for, radiocommunication

Interference-causing equipment: Any device, machinery or equipment, other than radio apparatus, that can cause interference to radiocommunication

Radio-sensitive equipment: Any device, machinery or equipment, other than radio apparatus, that can be adversely affected by radiocommunication emissions

Equipment that must meet technical standards
Broadcasting transmitters
Portable radio transmitters
Digital scanner receivers
Remote car alarms and starters
Garage door openers
Wireless computer links
Cellular phones
Cordless phones
Fax machines
GSM telephones
Mobile radios
Modems
Wireless remote devices
PABXs (including small business systems and key systems)
Pagers
Radio receivers
Radio transmitters
Telephone instruments
Telex equipment
Other equipment emitting a radio signal
Any customer premises equipment to be attached to any part of a licensed telecommunication network

Definition and publication of ICT reference standards for conformity assessment of ICT equipment

Other References:

- Table of ITU-T Recommendations and relevant parameters to be tested*:* http://www.itu.int/md/T13-SG11-131107-TD-GEN-0300/en
- ITU-R Recommendations (link)
- USA: FCC Testing (link)
- European Commission: Harmonised standards under Directive for R&TTE: http://ec.europa.eu/enterprise/sectors/rtte/documents/standards/index_en.htm
- Canada: Technical Requirements for Radio Systems: http://www.ic.gc.ca/eic/site/icgc.nsf/eng/06957.html#q=srsp;
- UAE: Technical Standards: http://www.tra.gov.ae/type_approval.php
- Brazil: Technical requirements for user's terminals: www.anatel.gov.br
- Mauritius: ICT Authority is the national regulator for the ICT sector and Postal Services: http://www.icta.mu/telecommunications/std_list.htm

4. Accreditation, recognition and acceptance of laboratories and qualified professional

4.1 Designation/recognition of accreditation and certification bodies, and testing laboratories

- Appointment and peer assessment of accreditation bodies
- Designation/recognition of certification bodies
- Designation/recognition of testing laboratories

4.2 Recommendations on policies and strategies for developing conformity assessment testing laboratories compliant with international standards

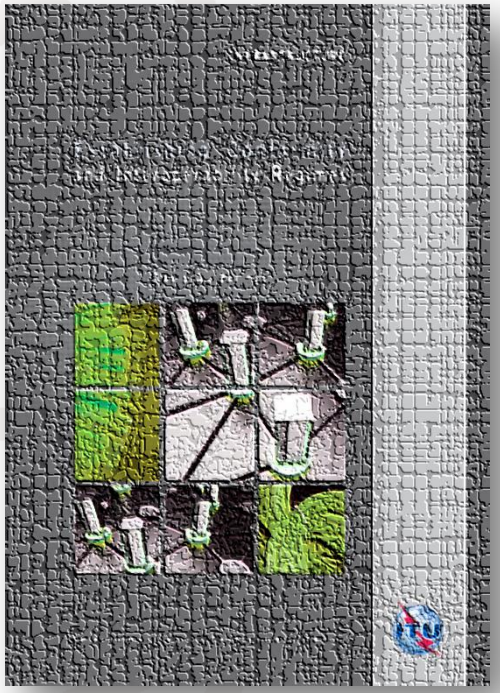
- Legal status/legal entity
- Financial policy
- Management structure
- Personnel
- Training system
- Premises
- Equipment

4.3 Recommendations on how to become accredited by international accreditation bodies (ILAC, IAF, APLAC, IECEE, etc.) in the relevant ICT scope

In production… (2014)

Establishing Conformity and Interoperability Regimes

Complete Guidelines



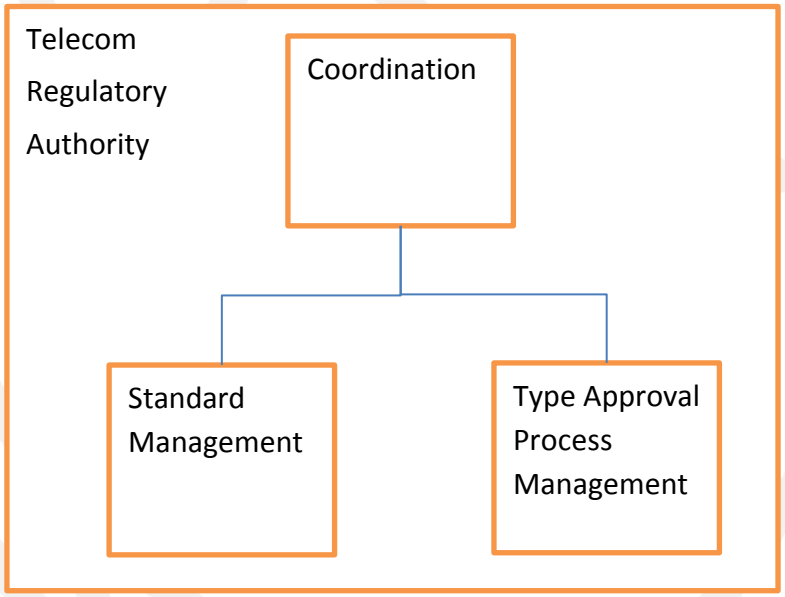
Terms of Reference here

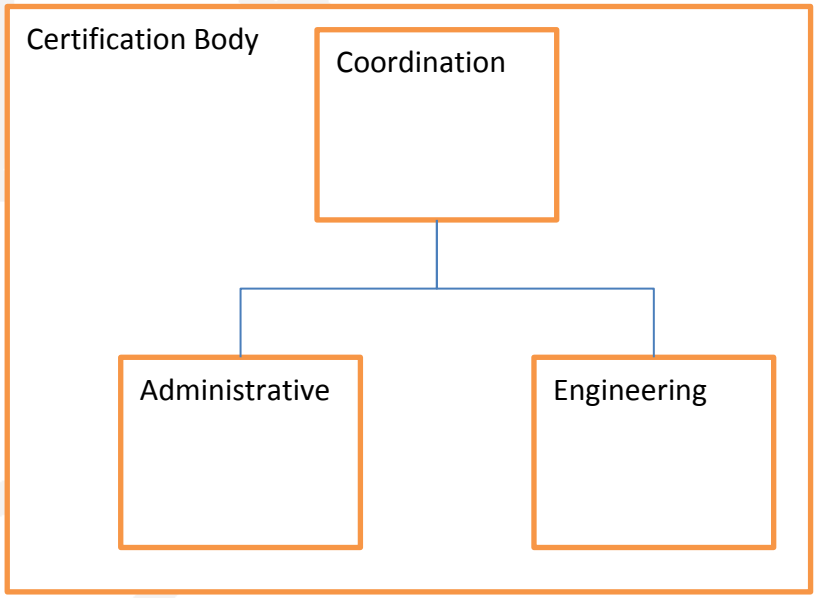
Revision of a Conformance Assessment Regime (Case study)

- Review of a Conformance Assessment Regimes. Some necessities of improvement:
  - Self-Declaration of Conformity acceptance;
  - Accountability of vendor's local representatives (manufacturer`s representative);
  - Adapting existing equipment to new conformity assessment rules, standards, and procedures;
  - Revision of the Application Form to ensure, among other, product origin verification;
  - Renewal of certificates (procedures and fees);
  - Review of the fee structure.

Revision of a Conformance Assessment Regime (Case study)

- Type Approval Division and Certification Body Structures





Revision of a Conformance Assessment Regime (Case study)

- Example of a check-list from a conformity assessment report

(next slide…)

Product: Digital TV – DVB T2– set-top box				
Manufacturer/Model: FutureTV /123456-7				
Standart: MNS 6401 : 2013				
Item 5.1 (EMC requirements)	Table 1. Spurious emission limits	**C** √	**NC**	**NA**
Observation: Test Report n. XXX				
Item 5.2 (Electric power)	Electric power: input: 230 V +- 10% / 50 Hz +- Output : 12 V dc	**C** √	**NC**	**NA**
Observation: Test Report n. YYY				
Item 5.3	Identification requirements	**C** √	**NC**	**NA**
Observation: photo of the product indicating the logo and label.				
Item 5.4	Safety requirements (according to IEC 60065) *Observation: protection from electric shock; protection from fire hazard; protection from excessive heating	**C** √	**NC**	**NA**
Observation: Test Report n. ZZZ				
Item 5.5	Accessories	**C** √	**NC**	**NA**
Observation: applicant's declaration.				
Item 5.6	Power plug: BS 6500;	**C** √	**NC**	**NA**
Observation: applicant's declaration.				
Item 5.7	Ram memory requirement >= 64 MB; flash disk >= 8 MB; processor clock (cpu) >= 300 MHz	**C** √	**NC**	**NA**
Observation: applicant's declaration.				
Item 5.8	Ability to uptade software	**C** √	**NC**	**NA**
Observation: applicant's declaration.				

Identification of the Product, Manufacturer, Model and the reference standard

Indication of the Standard's technical requirement

Test Report identification or other relevant information

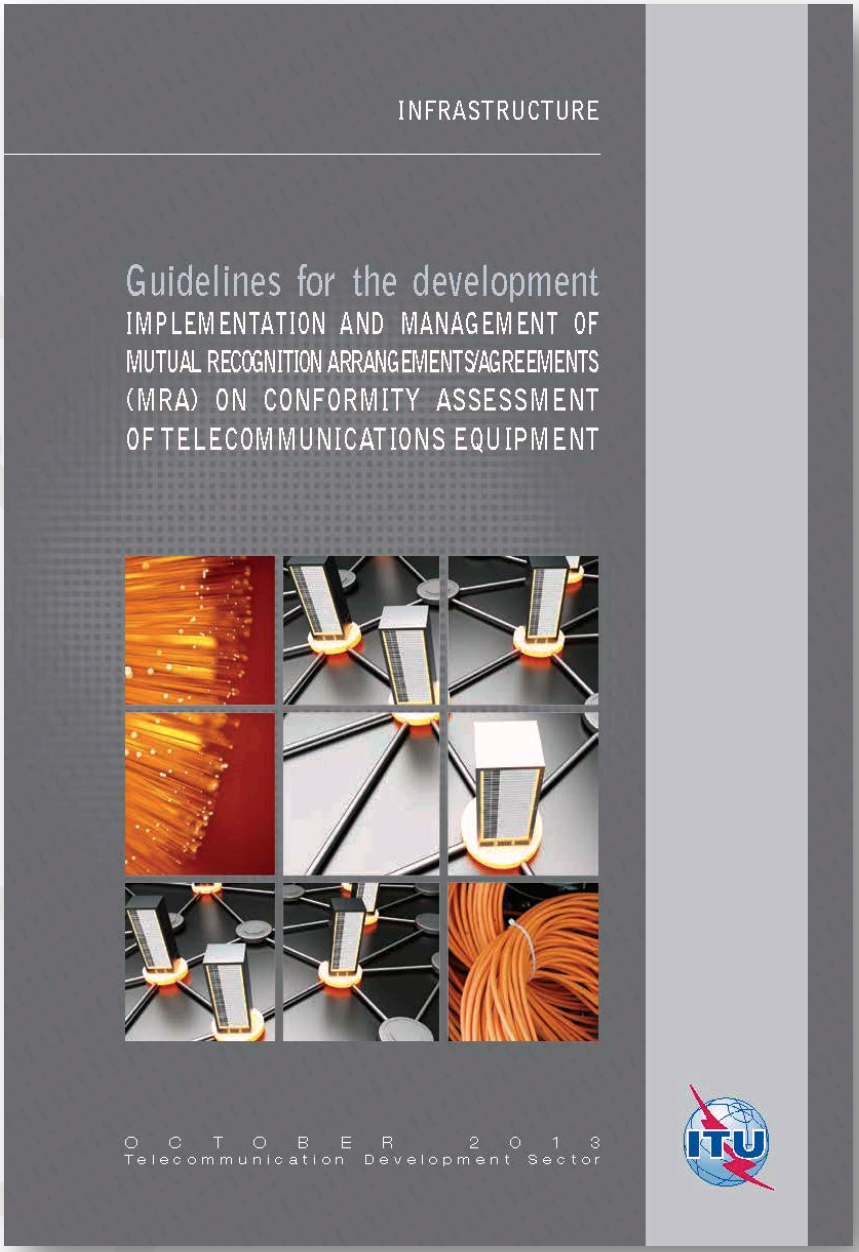
Assessment result: C- conformance; NC- non conformance; NA- not applicable

Note: C – conformance; NC – non conformance; NA – not applicable.

Roadmap for implementation (Case Study)

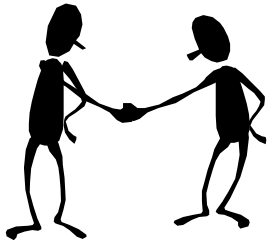
Tiempo de implementación	2014				2015			
Acción	**1Q**	**2Q**	**3Q**	**4Q**	**1Q**	**2Q**	**3Q**	**4Q**
Normalización								
EMC	x	x	x	x				
Seguridad	x	x	x	x				
SAR		x	x	x	x			
TV Digital	x							
Radio (limites de emissión, compliance check; spectrum regulation)	x							
Protocolos de interoperabilidad					x	x	x	x
Mecanismos de Evaluación da Conformidad								
Check-list for Type Approval	x	x	x	x	x	x	x	
Diseg̃no de Tasas	x							
Responsables pela homologación	x							
Asistencia								
Asistencia de la UIt			x					
Normas de la UIT		x	x					
Type Approval Res. review	x	x	x					
Creación de capacidad								
Procedimentos de Homologación (Type Approval, Standards, etc.)			x					
Dominios C&I (EMC, mobile, NGN, etc.)				x				
ARM			x					

2. Guidelines for the development, implementation and management of mutual recognition arrangements/agreements (MRAs) on conformity assessment



Guidelines here

2. Guidelines for MRAs



- These guidelines aim at promoting the understanding and establishment of MRA, known as efficient tools to promote regional integration

- Through the share and efficient use of Conformance and Interoperability (C&I) infrastructures – as laboratories, accreditation bodies and regulatory practices – technical requirements can be harmonized and the transit of ICT goods and services can be facilitated, increasing trade and regional development

Guidelines for MRAs (cont.)

Topics:

- Benefits
- Types of MRA
- Attributes
- Development
- Implementation
- Management
- Consultation and Training
- Stakeholders
- Procedures for contesting the competence of conformity assessment bodies
- A typical MRA operation
- Recommendation

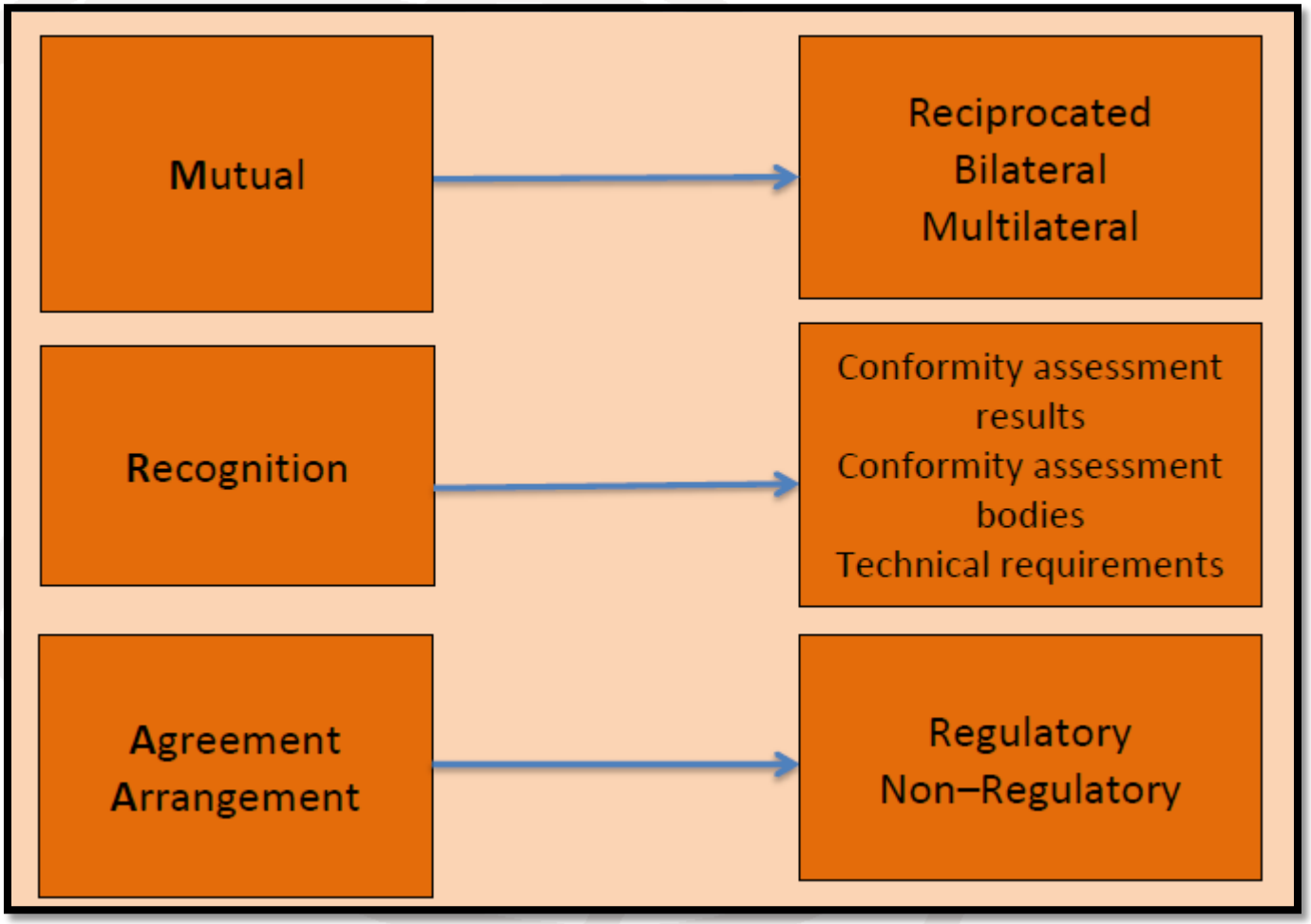
Guidelines for MRAs (cont.)

Agreement x Arrangement

- A **Mutual Recognition Agreement** is a formal legal commitment between parties for recognition of conformity assessment results for telecommunication equipment. It deals with regulatory requirements and it is referred to in the text as “regulatory MRA”. Often such agreements are made bilaterally, regionally or multilaterally between two or more governments.

- A **Mutual Recognition Arrangement** is a voluntary arrangement between parties for recognition of conformity assessment results for telecommunication equipment. It deals with nonregulatory requirements and it is referred to in the text as “non-regulatory MRA”. An example of a mutual recognition arrangement is amongst accreditation bodies to mutually recognize the conformity assessment results from accredited conformity assessment bodies.

Guidelines for MRAs (cont.)



MRA Benefits

For manufacturers:

• an opportunity to test and certify products one time to the requirements of multiple markets and ship products without further conformity assessment;

• increase certification efficiency for products exported to foreign markets, thus increasing export opportunities for small and medium-sized enterprises (SMEs); and

• decreasing time-to-market for companies manufacturing telecommunication equipment with shorter and shorter product life cycles, thus maximizing export opportunities and allowing for rapid reinvestment in research and development for next-generation technologies.

For conformity assessment bodies:

• Allowing conformity assessment bodies (CABs) to increase the value of their service by offering their clients a substantially wider portfolio, including testing and certifying products for multiple markets.

MRA Benefits (Cont.)

For regulators:

- reduction of regulatory resources required to certify terminal attachment and radio equipment;
- an opportunity to reallocate a portion of these former certification costs to other areas;
- a potential stepping stone towards further harmonizing of technical requirements and of regional and national conformity assessment systems; and
- access to a pool of knowledge about the latest global trends and experiences regarding conformity assessment and regulatory systems.

For consumers:

- increasing consumer access to the widest variety of available technology;
- faster access to equipment at a lower cost; and
- speeding the development of telecommunication and Internet infrastructure.

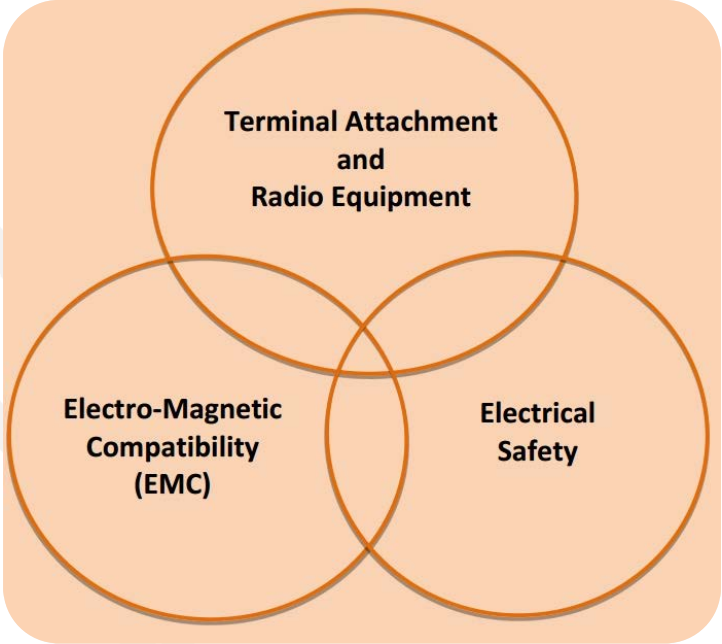
Guidelines Highlights

Attributes of an MRA

2.1 Designation
2.2 Accreditation
2.3 Recognition
2.4 Retaining designation or recognition
2.5 Suspension or withdrawal of designation or recognition
2.6 Dispute resolution

Guidelines Highlights

3. Development of an MRA



3.1 Framework for MRAs
3.2 Coverage and Scope
3.3 Identification of parties to the MRA
3.4 Obligations under an MRA
3.5 Duration and disestablishment of a MRA
3.6 Examples of some MRAs on conformity assessment

Guidelines Highlights

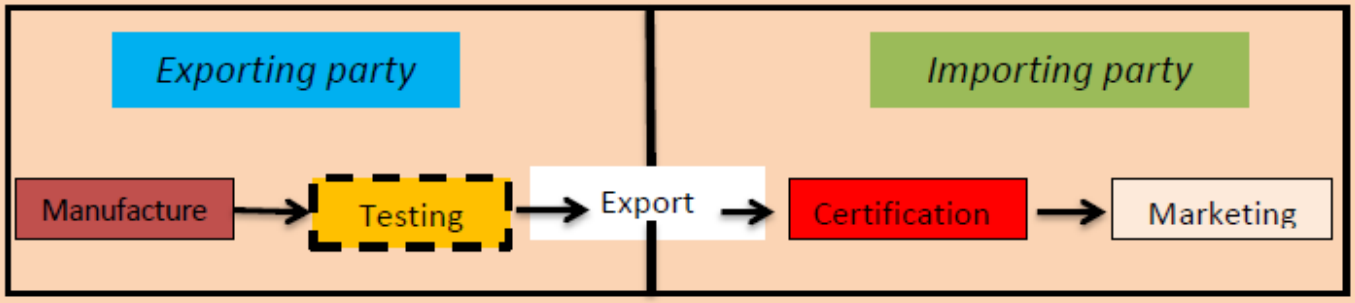
4 Implementation of an MRA

4.1 Conformity Assessment
4.2 Pre-implementation preparation
4.3 Confidence building and start-up
4.4 Identification of scope – technical requirements and phases
4.5 Identification of contacts
4.6 Information exchange
4.7 Nomination of designating authorities
4.8Identification of MRA host and repository of signatories
4.9 Nomination of regulatory authorities
4.10 Identification of accreditation bodies
4.11 Notification of conformity assessment bodies
4.12 Recognition of conformity assessment bodies
4.13 Formation of a joint committee
4.14 Monitor and surveillance programmes
4.15 Experience from implementation of existing MRAs

4 Implementation of an MRA

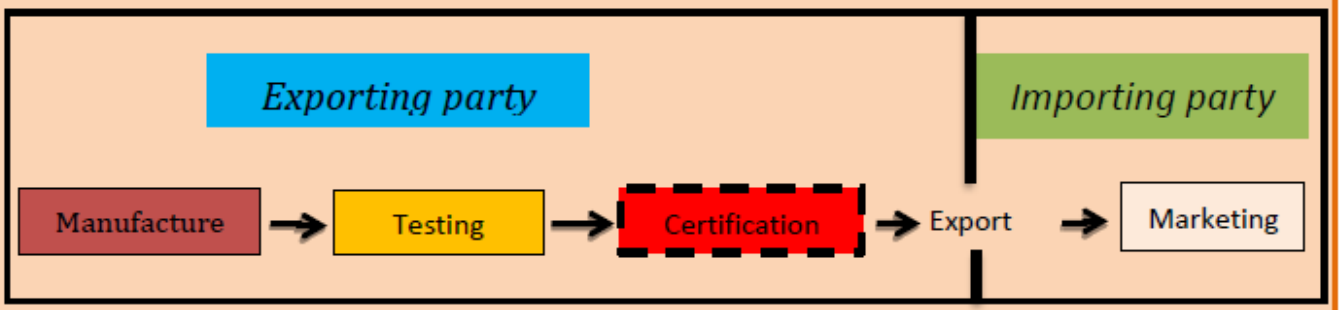
4.4 Identification of scope – technical requirements and phases

Figure 4: Phase 1 – Mutual acceptance of test reports



Source: Andrew Kwan

Figure 5: Phase 2 – Mutual acceptance of certification



Source: Andrew Kwan

Parties can choose to implement the phases of the MRA one at a time or both together. Typically the parties will implement Phase 1 and after gaining experience and confidence with the Phase 1 procedure, they will then proceed to implement the Phase 2 procedure.

Guidelines Highlights

5 Management of an MRA

5.1 Joint committee

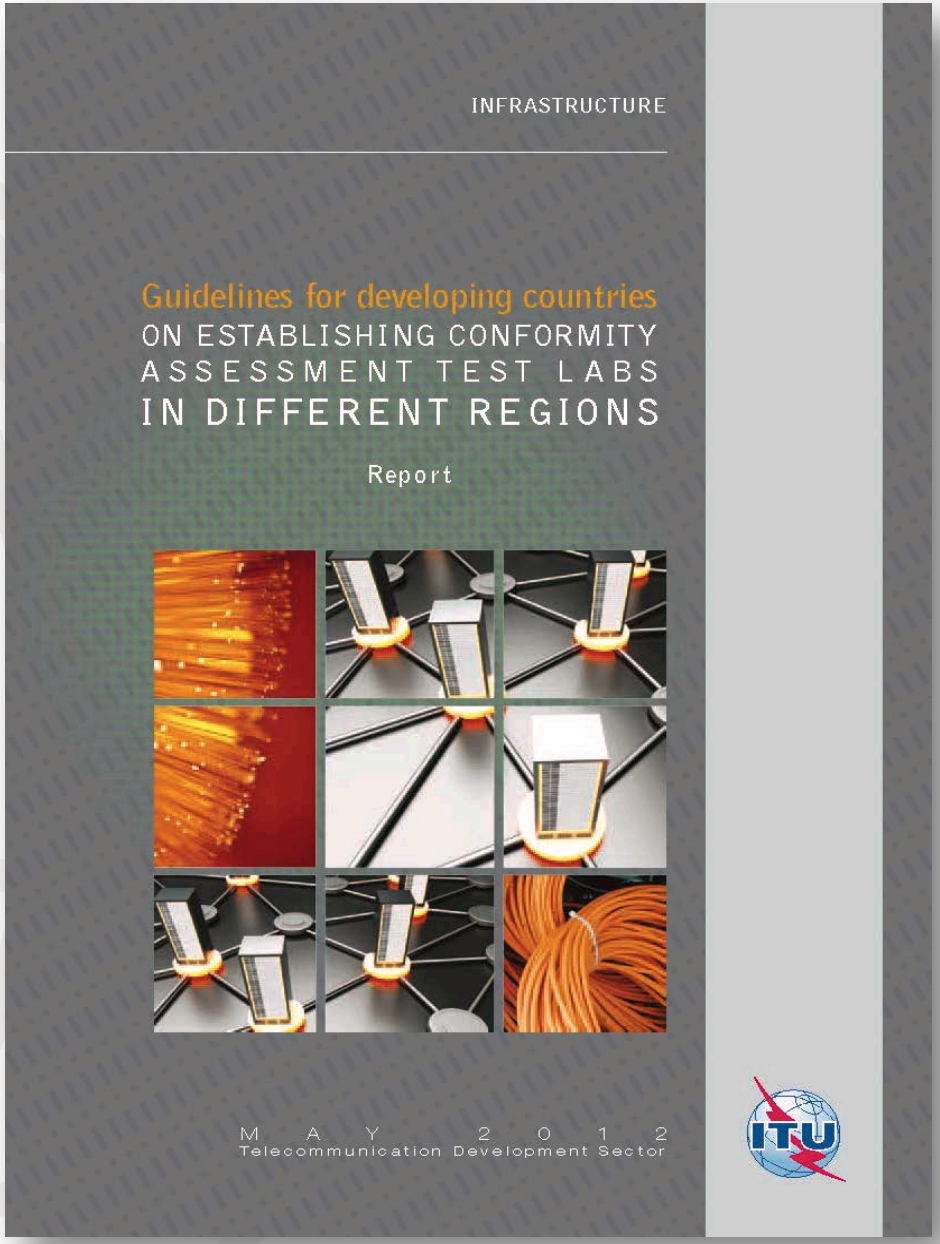
5.2 Update and surveillance of accreditation bodies and conformance assessment bodies (CABs)

5.3 Management of data

5.4 Record of notifications and changes

5.5 Termination and withdrawal from an MRA

3. Guidelines for developing countries on Establishing Conformity assessment Test Labs in Different Regions



Guidelines here

Guidelines for Developing Countries for Establishing Test Labs in Different Regions

http://www.itu.int/ITU-D/tech/ConformanceInteroperability/ConformanceInterop/indexGuidelines.html

- ***Status*** in the regions and needs
- ***Funding and Training Sources***
- ***Criteria*** to establish Accreditation and Conformity Assessment Bodies - ***International Telecommunications Testing Centres (ITTCs)***
- Economics and ***Cost Implications*** for ITTCs
- ***Roadmap*** for ITTC rollout

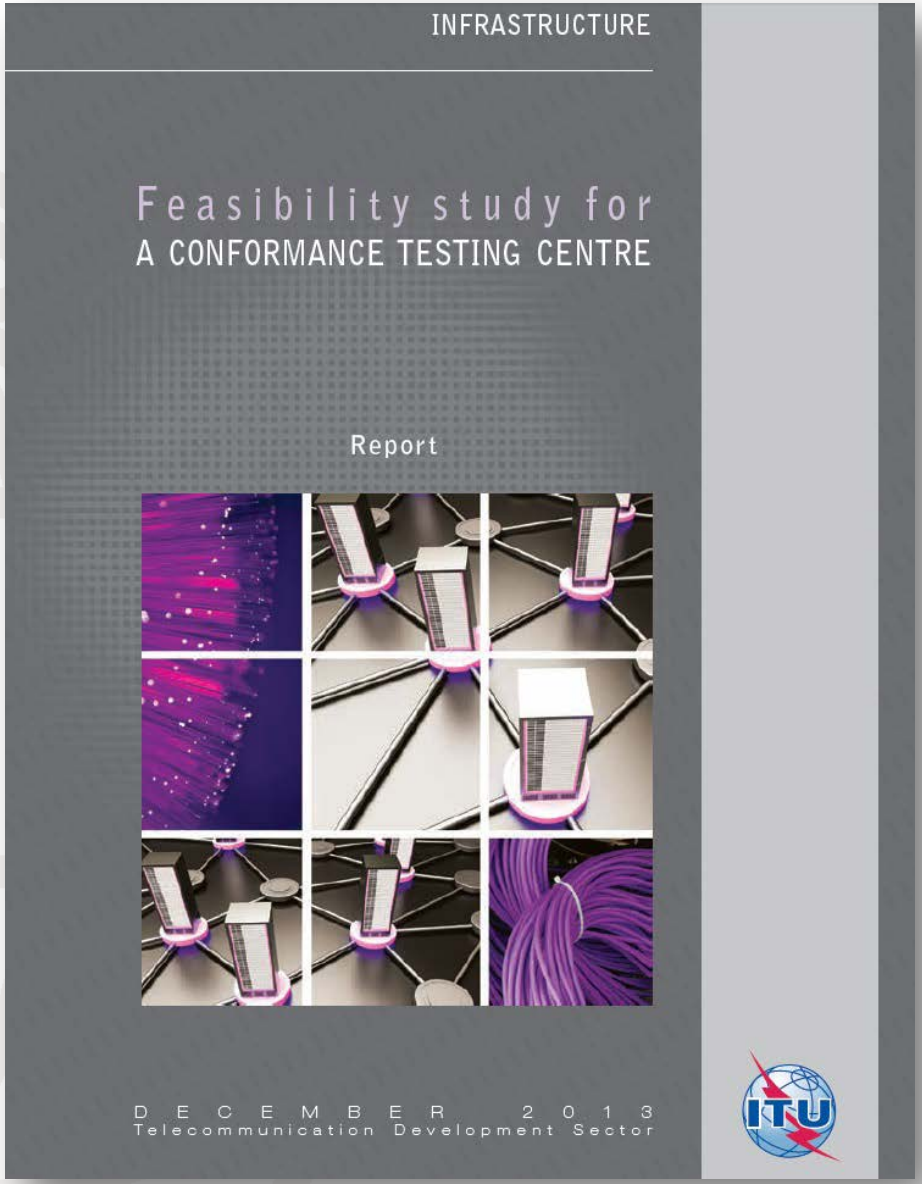
Steps to Establish an ISO 17025 Compliant Test Lab

- Management requirements and systems
- Lab requirements, test methods and procedures, audits, equipment handling, technical competence
- Document control, calibration records and staff records
- Handling of test reports and calibration certificates
- Service to customers and handling of complaints

Funding and Training Sources

- UNIDO, major Banks in each region, specialized funding agencies for telecoms projects and others
- Requirements to access funds vary from low interest loans, to grants, seed funding and cost underwriting
- Repository of international telecom training organizations
- Costs of training may vary from just travel to and from location, to government and supplier subsidized training, to private for-profit fully costed training.

4. Feasibility Study for the establishment of a Conformity Testing Centre



Feasibility Study link

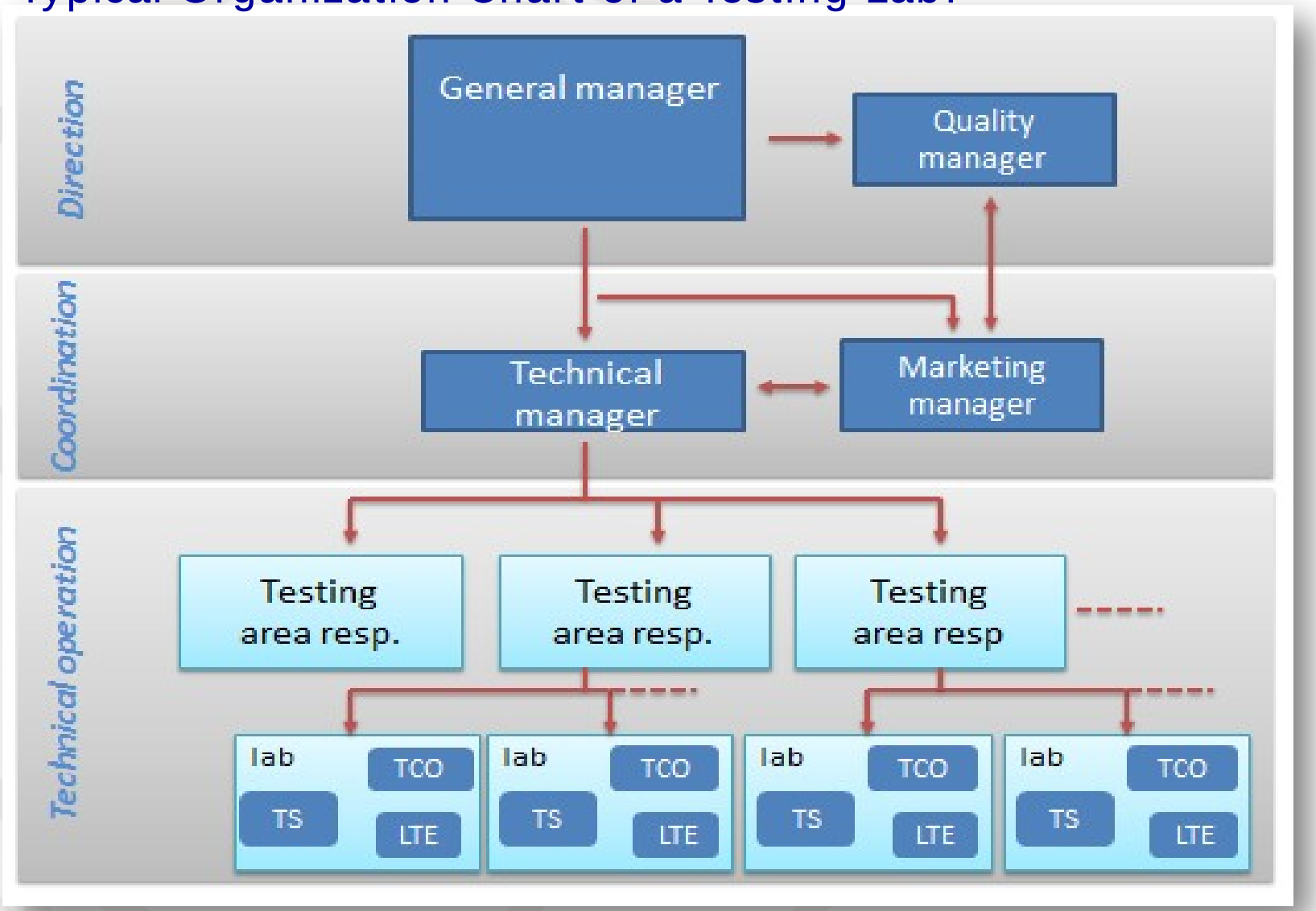
Feasibility Study for the establishment of a Conformity Testing Centre

The feasibility study will addresses:

i. Implementation;
ii. Functional Model of Type Approval Institution;
iii. Sustainability of operations;
iv. Pricing policies;
v. Proposal of the Organization Scheme;
vi. Technical requirements for Type Approval Laboratories;
vii. Staff requirements;
viii. Project Implementation Recommendations; and
ix. Investment costs estimation (summary).

Feasibility Study for the establishment of a Conformity Testing Centre

Typical Organization Chart of a Testing Lab:



Feasibility Study for the establishment of a Conformity Testing Centre (cont.)

Testing laboratory infrastructures:

Area of competence
Specific Absorption Rate lab
User experience lab
Broadband access lab
Mobile value added services lab
Electrical safety & protection lab
Electroacoustic lab
Electromagnetic compatibility lab
Radio & Signalling lab
Powering efficiency lab
Quality of material lab
Personal area network lab
Fixed Test plant
Mobile Test plant

Feasibility Study for building a Conformance Testing Centre (cont.)

Overview 1

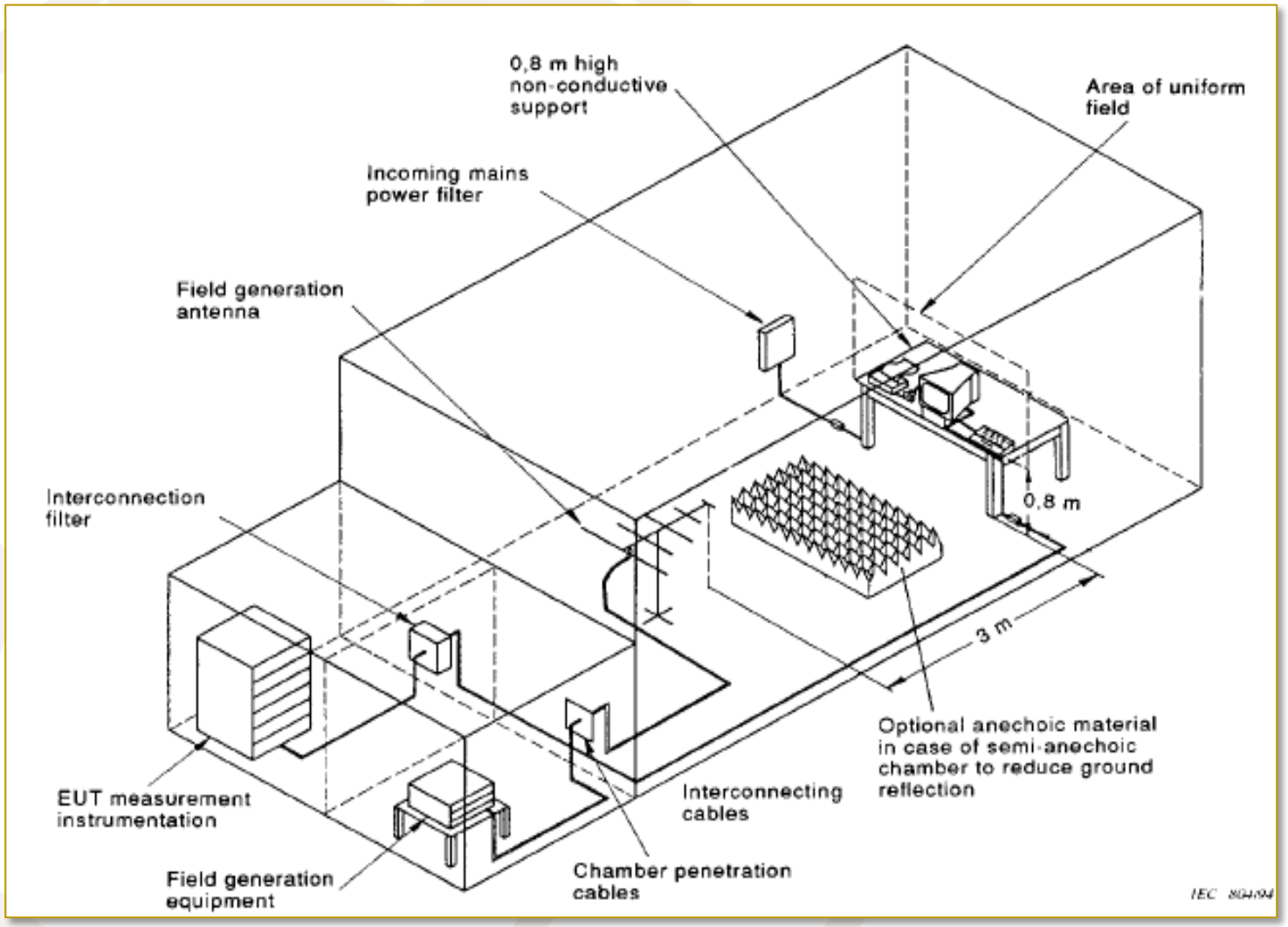
Broadband access laboratory (BBA):

- The scope of the broadband access laboratory is to evaluate all different equipment and functionalities used in next generation access networks, ranging from the physical layer to networking aspects

- In particular xDSL transmission performances and optical parameters are tested for copper and fiber solution in relation to the different architectural choices (FTTx)

Overview 2

EMC: Typical set-up for table top equipment for radiated immunity tests



Laboratorios	Activity	m^2	Location Rent 1 000 EUR/year	Utility 1 000 EUR /year	Instrument Asset 1 000 EUR	Number of staff	Instrument Opex 1 000 EUR /year
SAR	Specific absorption rate lab	150	19	28	800	4	25
USX	User experience lab	130	17	24	100	6	0
BBA	Broadband access lab	300	39	56	1.400	7	5
VAS	Mobile value added services lab	40	5	7	0	3	0
EPS	Electrical safety and protection lab	80	10	15	1.200	4	25
ELA	Electroacoustic lab	250	32	46	800	4	5
EMC	Electromagnetic compatibility lab	300	39	56	1.600	5	5
RSL	Radio and signalling lab	250	32	46	2.000	12	10
PWR	Powering consumption lab	80	10	15	200	2	5
QML	Quality of material lab	250	32	46	1.300	6	15
WIF	Personal area network lab	170	22	31	500	5	5
TPF	Fixed test plant	900	117	167	3 000	33	120
TPM	Mobile test plant	2 500	324	463	3 000	55	300
management						10	
cross activities (*)						24	
TOTAL		5 400	700	1 000	15 900	180	520

(*) Cross activities: Project office, ICT management, quality, secretariat

Thank you

C&I Portal

Contact: Riccardo Passerini

Telecommunication Development Bureau, ITU