

# ITU Asia-Pacific Centres of Excellence Training on Conformity and Interoperability

## Session 2: Conformity Assessment Principles

*12-16 October 2015  
Beijing, China*

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## Agenda

1. Context - Telecommunications Regulation
2. Conformity Assessment
3. Creating an Orderly Telecommunications Equipment Market

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# 1. Context – Telecommunications Regulation



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## Aims of telecommunications market regulation

- To create an orderly, healthy market in communications services and equipment at reasonable prices
- Protect consumer interests
  - Health & safety
  - Quality of service
- Protect national interests
  - Reliability
  - Security
  - Emergency and disaster mitigation services

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# Regulations Converge

## Regulatory Traditions

- Telecoms
  - Traditionally detailed regulation of basic telephony service
  - Historically *de-jure* or *de-facto* monopolies
  - Competition now widely regarded as best means of development
  - Regulation for competition and universal service
- Internet
  - Developed without detailed control which has resulted in rapid growth
  - Social interests have become increasingly dependent on the Internet leading to demands for basic regulation
  - Regulation for confidence
- Media
  - Vertical integration of market
  - Well regulated
  - Regulation of content

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## Technology-Neutral Regulation

- Malaysia 1998
- EU 2002
- Tanzania 2003

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## EU Converged Regulatory Framework

- Licensing and authorisations
- Access and interconnection
- Management of radio spectrum
- Universal service
- User and consumer rights
- Numbering, naming and addressing
- Specific competition issues
- Institutional issues

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## Convergence of Regulatory Authorities e.g. UK

- Independent Television Commission (ITC),
  - Broadcasting Standards Commission (BSC),
  - Office of Telecommunications (OfTel),
  - Radio Authority (RAu) and
  - Radiocommunications Agency (RA)
- have been merged to form a new regulatory body - OFCOM.



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## Regulatory activities

- Competition
  - Licensing of operators; access & interconnection
- Consumer interests
  - Safety; security; privacy & data protection
- Tariffs
- Scarce common resources
  - Radio spectrum; numbers & addresses
- Social policy objectives
  - Universal service; content
- Equipment approval

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## Equipment approval

- Requirements
- Conformity Assessment Scheme
  - Supplier declaration / independent testing
- Mutual Recognition Agreements

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## Legal instruments

- Communications Laws
- Regulations



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## 2. Conformity assessment



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# Conformity Assessment

- Definition: “demonstration that specified requirements relating to a product, process, system, person or body are fulfilled”
  - ISO/IEC 17000:2004

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## Outline of Conformity Assessment Process

End users – gain independent assurance that products meet their requirements



Certification body – issues conformity assessment certificate; accredited & recognised internationally



Testing Laboratory – performs tests on products & issue test reports; accredited by a national authority and recognised internationally



Standards Development Organisation – produces base specification & associated test specifications

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# Why Standardise?

- Ensure equivalence
  - Ensure requirements are met
  - Ensure quality
  - Ensure interoperability
    - Compatibility between equipment from different sources
      - Manufacturers
      - Users (e.g. network operators)
    - Interface characteristics & system behaviour
      - Between systems
      - Between components within a system
- Reduce barriers to trade
- Provides governments and regulators with best practices

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# Why Test Conformance?

- Avoid equipment incompatibilities due to:
  - Different interpretations of a specification
  - Errors in implementation
  - Choice of different options



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# Why Certify?

- Give confidence that products requirements are met
- Benefits the user as they can make better purchase decisions
- Benefits the supplier as products may more easily gain market acceptance
- Helps level the industry playing field & encourages competition
- WTO Technical Barriers to Trade Agreement recognises “the important contribution that...conformity assessment schemes can make...by improving efficiency of production and facilitating the conduct of international trade”
- Provides governments and regulators with best practices

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# Fundamentals of Product Certification (ISO/IEC Guide 67)

- “As products are designed, produced, distributed, used and ultimately disposed of, they may give rise to societal concerns. A very frequent concern is simply whether a product is what it appears to be. Concerns can involve such product attributes as safety, health or environmental impacts, durability, compatibility, suitability for intended purposes or for stated conditions, and similar considerations.”

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## Consideration of Risk

- “The type of activity undertaken to demonstrate conformity of product with requirements is often determined by the consequences of nonconformity.
- When consequences are insignificant or not severe, society may (require) expect little or no demonstration of conformity of product since the problems generated can be easily addressed and solved after they occur. In these cases the supplier's claims may be sufficient but they may be complemented by third-party product certification on a voluntary basis.
- However, where the consequences of nonconformity are significant, society may demand completion of activities that demonstrate conformity to requirements prior to allowing the product on the market, concurrent with the product appearing on the market, or both. One method of providing such assurance is through product certification.”

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# Design of Conformity Assessment Scheme

- Certification scheme should be related to the degree of risk associated with non-compliance considering such aspects as safety, health or environmental impacts, durability, compatibility and suitability for intended use
- Cost should not be excessive
- Should ensure transparency and neutrality

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## Principles of Conformity Assessment

- Do not create unnecessary barriers to trade
- Open and transparent – equal treatment of all applicants
- Requirements and procedures based on international standards as much as possible
- Information on all requirements and procedures available to the public
- Information requirements are limited to that which is necessary to assess conformity and determine fees
- CA procedures are completed quickly and efficiently
- CA bodies undertake appropriate surveillance activities to ensure continued product conformity and protection of their reputation
- Effective procedures for reviewing complaints shall be in place

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# ISO/IEC Requirements for bodies operating product certification schemes

- 3<sup>rd</sup> party certification scheme
- Non-discriminatory
  - “accessible to all applicants whose activities fall within its declared field of operation. There shall not be undue financial or other conditions. Access shall not be conditional upon the size of the supplier or membership of any association or group”
- Standard specifications required
  - “If explanation is required as to the application of these documents for a specific certification system, it shall be formulated by relevant and impartial committees or persons possessing the necessary technical competence, and published by the certification body.”

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# Conformity Assessment Bodies

- Must ensure:
  - Independence
  - Objectivity
  - Impartiality
  - Confidentiality
  - Professional integrity



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## Organization of certification body

Impartial

— Transparent

— Legal entity

— Competent personnel

— Independence

- “ensure that activities of related bodies do not affect the confidentiality, objectivity and impartiality of its certifications, and it shall not 1) supply or design products of the type it certifies, 2) give advice or provide consultancy services to the applicant as to methods of dealing with matters which are barriers to the certification requested, 3) provide any other products or services which could compromise the confidentiality, objectivity or impartiality of its certification process and decisions”

— Complaints procedure



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# Requirements on organization of certification body

## (1)

- Impartial
- Transparent
- Legal entity
- Competent personnel
- Independence
  - “ensure that activities of related bodies do not affect the confidentiality, objectivity and impartiality of its certifications, and it shall not 1) supply or design products of the type it certifies, 2) give advice or provide consultancy services to the applicant as to methods of dealing with matters which are barriers to the certification requested, 3) provide any other products or services which could compromise the confidentiality, objectivity or impartiality of its certification process and decisions”
- Complaints procedure

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# Requirements on organization of certification body

## (2)

- Operations
  - Specification of the technical requirements for conformity (including testing, sampling & inspection requirements)
  - Monitor the suitability and competence of the organisations performing testing, inspection and certification/registration
- Subcontracting
  - Agreement covering confidentiality etc
  - Certification body keeps full responsibility
- Quality System
- Conditions and procedures for granting, maintaining, extending, suspending and withdrawing certification
- Internal audits and management reviews

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# Requirements on organization of certification body

## (3)

- Documentation
- Records
- Confidentiality
- Changes in certification requirements
- Appeals, complaints and disputes
- Application procedure
- Evaluation procedure
  - Pre-evaluation, evaluation and report
- Decision on certification
- Surveillance
- Use of licenses, certificates and marks of conformity
- Complaints made to suppliers

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# Conformity Assessment Types

- 1<sup>st</sup> Party Attestation
  - Issued by manufacturer or supplier
  - Manufacturer or supplier accepts responsibility
- Supplier Declaration of Conformity (SDoC)
  - Same as 1<sup>st</sup> Party attestation but compliant with ISO/IEC 17050
  - SDoC may be based on 1<sup>st</sup> or 3<sup>rd</sup> Party determination
- 3<sup>rd</sup> Party Declaration
  - Independent
  - ISO/IEC 17000

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# Testing Options

- Initial testing of a product and assessment of its suppliers' quality systems, followed by surveillance that takes into account the factory quality system and the testing of samples from the factory and the open market

OR

- Initial testing and surveillance testing

OR

- Type testing only

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# ISO/IEC 17000 Series

## Conformity assessment

ISO/IEC 17000:2004 Vocabulary and general principles.

ISO/IEC 17001:2005 Impartiality - Principles and requirements

ISO/IEC 17002:2004 Confidentiality - Principles and requirements

ISO/IEC 17003:2004 Complaints and appeals - Principles and requirements

ISO/IEC 17004:2005 Disclosure of information - Principles and requirements

ISO/IEC 17007: 2009 Guidance for drafting normative documents suitable for use for conformity assessment

ISO/IEC 17011:2004 General requirements for accreditation bodies accrediting conformity assessment bodies

ISO/IEC 17021:2011 Requirements for bodies providing audit and certification of management systems

ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories

ISO/IEC 17030:2003 General requirements for third-party marks of conformity

ISO/IEC 17040:2005 General requirements for peer assessment of conformity assessment bodies and accreditation bodies

ISO/IEC 17050-1:2007 Supplier's declaration of conformity - Part 1: General requirements

ISO/IEC 17050-2:2004 Supplier's declaration of conformity - Part 2: Supporting documentation

ISO/IEC 17065:2012 Conformity assessment -- Requirements for bodies certifying products, processes and services

ISO/IEC 17067:2013 Conformity assessment -- Fundamentals of product certification and guidelines for product certification schemes

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# ISO/IEC Conformity Assessment Guides

ISO/IEC Guide 23 Methods of indicating conformity with Standards for third Party certification Systems

ISO/IEC Guide 28 Conformity assessment - Guidance on a third-party certification system for products

ISO/IEC Guide 60 Conformity assessment - Code of good practice

ISO/IEC Guide 65 General requirements for bodies operating product certification schemes  
[Revised by ISO/IEC 17065:2012]

ISO/IEC Guide 67 Conformity assessment – fundamentals of product certification [Revised by ISO/IEC 17067:2013]

ISO/IEC Guide 68 Arrangements for the recognition and acceptance of conformity assessment results

# Market regulatory spectra

## Telecommunications Regulation



***Ex-ante  
Sector-specific regulation***

***Ex-post  
General competition law***

## Consumer Protection



***Specific mandatory  
conformity assessment***

***General consumer  
protection legislation***



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## 5. Creating an Orderly Telecommunication Equipment Market



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# Options

- Full national scheme
  - Legal framework for market entry & penalties for non-compliance
  - Regulations
  - Technical specifications
  - Testing, certification and accreditation
  - Marking
  - Market surveillance
- Adopt existing arrangements
  - EU / FCC / Industry Canada / others

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# ITU Conformity and Interoperability Guidelines

- Guidelines for developing countries on establishing conformity assessment test labs in different regions (2012)
  - Guidelines for the development, implementation and management of mutual recognition arrangements/agreements on conformity assessment (2013)
  - Feasibility study for the establishment of a conformity testing centre (2013)
  - Establishing Conformity and Interoperability Regimes – Basic Guidelines (2014)
  - Establishing Conformity and Interoperability Regimes: Complete Guidelines (2015)
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- <http://www.itu.int/en/ITU-D/Technology/Pages/PublicationsandDeliverables.aspx>

ITU : I Thank U

