



Conformance and Interoperability

**ITU ASP COE TRAINING ON “WIRELESS BROADBAND
ROADMAP DEVELOPMENT”**

06-09 August 2016

Tehran, Islamic Republic of Iran

Agenda

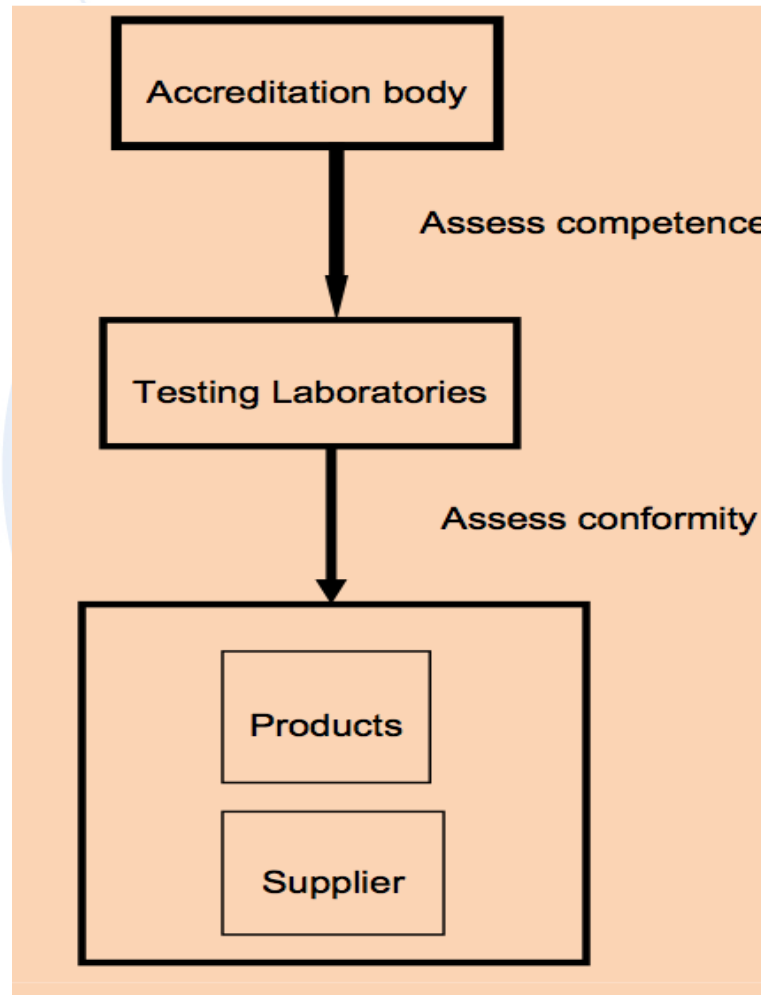
- Conformity Assessment Principles
- Telecommunications Equipment Approval Regimes – some examples
- Mutual Recognition Agreements Arrangements (MRAs)

Conformity Assessment Principles

Conformity Assessment

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

Conformity Assessment Hierarchy



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

Why Access Conformity and Certify?

- Give confidence that products requirements are met and, if applicable, that equipment will interoperate
- 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

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.”

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.”

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

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

Conformity Assessment Types

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

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

ISO/IEC Requirements for bodies operating product certification schemes

- 3rd 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.”

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



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

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)
- <http://www.itu.int/en/ITU-D/Technology/Pages/PublicationsandDeliverables.aspx>

Voluntary / Mandatory

Voluntary

- GSM, UMTS & LTE
 - PTCRB (originally the PCS Type Certification Review Board)
 - Global Certification Forum (GCF)
- CDMA Certification Forum (CCF)
- CTIA Battery and Bluetooth Certification Programs
- WiFi Alliance
- WiMAX Forum
- Global Mobile Personal Communications by Satellite (GMPCS)
- Metro Ethernet Forum (MEF)
- Broadband Forum (BBF)
- HomeGrid Forum (HGF)
- IEEE Conformity Assessment Programme (ICAP)
- CableLabs
- SIP Forum
- IPv6 Forum

Mandatory

- FCC
- EC
- China
- etc

Mandatory Conformity Assessment Options

- Full unique 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



Telecommunications Equipment Approval Regimes – Some Examples

Agenda

- Mandatory telecommunications equipment conformity assessment in:
 - USA
 - Bahamas
 - Canada
 - European Union
 - United Arab Emirates
 - China

USA

- The FCC oversees the authorization of equipment using the radio frequency spectrum in the USA [<http://transition.fcc.gov/oet/ea/>].
- Such equipment may not be imported or marketed unless it meets the technical standards specified by the FCC. Depending upon its capabilities equipment may be subject to:
 - **verification** (in which manufacturers test the device),
 - **declaration of conformity** (which requires testing by an accredited test laboratory) or
 - **certification** (which is issued by the FCC or a designated Telecommunications Certification Body based on test results submitted by the supplier).
- FCC provides a database on equipment authorisations
 - [<https://apps.fcc.gov/oetcf/eas/reports/GenericSearch.cfm>]

FCC Codes of Regulation

Federal Communications Commission (FCC) Rules and Regulations
Title 47 of the Code of Federal Regulations (CFR)

- PART 22, 24 & 27 for GSM/WCDMA devices
- PART 15.247 for Bluetooth devices and WLAN (2.4 GHz)
- PART 15.407 for WLAN 802.11a (5GHz)
- PART 15.245 (902-928 MHz band, ISM bands)
- PART 15.225 for RFID (13.56 MHz)
- PART 25 for Satellite communications devices
- PART 90 for Private land mobile devices
- PART 95 for Personal radio devices

Bahamas

- Adoption of Part 15 of the Code of Federal Regulation 4.
- URCA (the Utilities Regulation and Competition Authority of the Bahamas) will issue a type approval certificate when it is satisfied that:
 - the device is designed for efficient use of the radio frequency spectrum and avoids harmful interference with no degradation of service to other users of the spectrum;
 - the device conforms to health and safety standards and does not cause harm to the user or other individuals; and
 - the electromagnetic emissions does not disrupt the operation of equipment operating nearby.
- An application for type approval must contain:
 - a completed application form for each make and model;
 - a signed and dated test report for each device, issued by an accredited test laboratory;
 - a copy of the FCC's Grant of Equipment Authorization Certification for the device;
 - a detailed technical specifications of the device;
 - a letter of authorization, if the application is made by anyone other than the manufacturer; and,
 - the type approval application fee in accordance with URCA's Fee Schedule in force at the time of the application, currently US\$100.

Canada

- The Certification and Engineering Bureau of Industry Canada provides a certification service for radio and terminal equipment in Canada.
- The Industry Canada Certification and Engineering Bureau maintain lists of terminal equipment and radio equipment that has been certified for use in Canada.

European Union

- The Radio and Telecommunications Terminal Equipment (R&TTE) Directive (1999/5/EC) [http://ec.europa.eu/enterprise/sectors/rtte/index_en.htm] defines a harmonised regulatory framework for the approval of terminal equipment in the European Union.
- It is based on supplier declaration of conformity to basic requirements intended to ensure that the equipment is safe to use and does not cause interference with other equipment.
- The Croatian Post and Electronic Communications Agency provides a database of equipment approved in accordance with the EU R&TTE directive

Radio and Telecommunications Terminal Equipment (R&TTE) Directive (1999/5/EC)

- Key articles:
 - Essential requirements (*Article 3*)
 - Notification and publication of interface specifications (*Article 4*)
 - Harmonised standards (*Article 5*)
 - Conformity assessment procedures (*Article 10*)
 - Notified bodies and surveillance authorities (*Article 11*)
 - CE marking (*Article 12*)
 - Transposition (*Article 19*)

R&TTE Essential Requirements

- All apparatus
 - LVD - Low Voltage Directive - 73/23/EEC (2006/95/EC) but with no voltage limit
 - EMC – Electro-Magnetic Compatibility -Directive 89/336/EEC (2004/108/EC)
- Radio equipment shall be constructed to avoid harmful interference
- Requirements according to equipment class

Requirements according to equipment class Amended by Regulation (EC) No. 596/2009

- (a) it interworks via networks with other apparatus and that it can be connected to interfaces of the appropriate type throughout the Community; and/or that
- (b) it does not harm the network or its functioning nor misuse network resources, thereby causing an unacceptable degradation of service; and/or that
- (c) it incorporates safeguards to ensure that the personal data and privacy of the user and of the subscriber are protected; and/or that
- (d) it supports certain features ensuring avoidance of fraud; and/or that
- (e) it supports certain features ensuring access to emergency services; and/or that
- (f) it supports certain features in order to facilitate its use by users with a disability.

Requirements according to equipment class

- Exceptional – any decision about additional requirements is published in the Official Journal of the European Union (OJEU) together with the date from which these additional requirements need to be applied.
- “Additional essential requirements are currently only in place for equipment accessing emergency services (maritime, inland waterway and avalanche beacons).” **Guide to the R&TTE Directive 1999/5/EC (April 2009)**

EMC Standards

- EN 55022 Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement - to be superseded by EN 55032 Electromagnetic compatibility of multimedia equipment - Emission requirements
- EN 55024 Information technology equipment - Immunity characteristics - Limits and methods of measurement
- EN 61000 Electromagnetic Compatibility (EMC)
 - Part 3-2 Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)
 - Part 3-3 Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection
 - Parts 6-1 to 6-4 Generic standards
 - Part 4 Testing and measurement techniques
- EN 301 489 Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services
 - Part 1: Common technical requirements
 - Parts for specific types of product or frequency band
 - e.g. Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz

Low Voltage Safety Standards

- EN 41003:2008 Particular safety requirements for equipment to be connected to telecommunication networks and/or a cable distribution system
- EN 50364:2010 Limitation of human exposure to electromagnetic fields from devices operating in the frequency range 0 Hz to 300 GHz, used in Electronic Article Surveillance (EAS), Radio Frequency Identification (RFID) and similar applications
- EN 60065:2002 Audio, video and similar electronic apparatus - Safety requirements
- EN 60215:1989 Safety requirements for radio transmitting equipment
- EN 60730-1:2011 Automatic electrical controls for household and similar use - Part 1: General requirements
- EN 60825 Safety of laser products
- EN 60950 Information technology equipment – Safety
- EN 62311:2008 Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz)
- EN 62479:2010 Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz)

Article 3 (2)

- “radio equipment shall be constructed so that it effectively uses the spectrum allocated to terrestrial/space radio communication and orbital resources so as to avoid harmful interference”
- There are many standards specific to equipment and service type to cover this requirement. For example:
- EN 300 220-2 V2.4.1 Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1 000 MHz frequency range with power levels ranging up to 500 mW; Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive;
- EN 300 440-2 V1.4.1 Electromagnetic compatibility and Radio spectrum Matters (ERM); Short range devices; Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Part 2: Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive;
- EN 302 536-2 V1.1.1 Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment in the frequency range 315 kHz to 600 kHz; Part 2: Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive; and
- EN 301 511 V9.0.2 Global System for Mobile communications (GSM); Harmonized EN for mobile stations in the GSM 900 and GSM 1800 bands covering essential requirements under article 3.2 of the R&TTE directive (1999/5/EC).

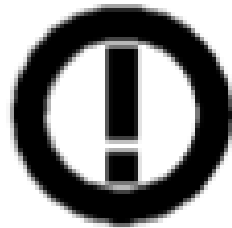
Harmonised Standards

- List published at:
 - http://ec.europa.eu/enterprise/policies/european-standards/harmonised-standards/rtte/index_en.htm

Equipment Classes

- Class 1
 - Equipment without restrictions or requirements for authorisation of use
 - e.g. TTE, radio receivers, radio transmitters which can only transmit under control of a public network and thus do not need any technical adjustment by the user (e.g. simple GSM handsets, simple UMTS handsets, non-DMO TETRA terminals)
- Class 2
 - Equipment whose placing on the market or putting into service is subject to restrictions, for example:
 - frequency available and allowed for that application in certain Member States only;
 - individual licence needed to use the specific radio equipment;
 - indoor use only.

Class 2 equipment



“information sign” or “alert sign”

Conformity Assessment Procedures

- Manufacturer may choose:
 - Internal production control
 - Internal production control plus specific apparatus tests
 - Technical construction file
 - Full quality assurance

Internal production control

- Can be used for telecommunications terminal equipment (TTE) and radio receivers
- Manufacturer must:
 - Ensure all applicable essential requirements are met:
 - by applying in full applicable harmonised standards and performing all test suites described in the harmonised standards themselves; or
 - by using other means of his own choice (for example by means of any existing technical specifications, by using partly an applicable harmonised standard, etc.). The manufacturer has to describe and explain the solutions adopted to meet the essential requirements
 - Document how the essential requirements have been met (including test results)
 - Take all measures necessary in order that the manufacturing process ensures compliance of the manufactured apparatus with the essential requirements

Internal production control plus specific apparatus tests

- Can only be used for radio equipment and if the manufacturer has used fully harmonised standards
- As for Internal production control plus:
- Perform all essential radio test suites described in the applicable harmonised standard and, if the applicable harmonised standard does not describe all essential radio tests suites, consult a notified body that will define them.

Technical construction file

- Can be used for both TTE and radio equipment.
- The manufacturer submits a technical construction file consisting of the results of test suites for all applicable essential requirements to a Notified Body that will issue an opinion within 4 weeks on whether conformity with the requirements of the Directive has been demonstrated.

Full quality assurance

- Can be used for both TTE and radio equipment.
- The manufacturer must operate an approved quality system for design, manufacture, final product inspection and testing which has been assessed by a Notified Body.

Declaration of Conformity

- Whichever conformity assessment route is chosen, the manufacturer must:
- Prepare a declaration of conformity; and
- Affix the CE mark (including notified body number and alert sign, where appropriate) on the apparatus, packaging and accompanying documents.

Testing

- Tests may be performed by the manufacturer or by a third party. No formal accreditation is required to carry out the tests. The manufacturer remains responsible in all cases for the compliance of his apparatus.

Conformity Assessment Procedures

Summary

Procedure		Applicable to equipment:		Role of the notified body NBnr (if applicable)	Marking	
		without radio part	with radio part		TTE Class 1	Class 2
II	Internal production control	Terminal equipment	Receivers		CE	
III	Internal production control plus specific apparatus tests		Radio equipment including a transmitter complying with harmonised standards		CE	CE ⓘ
				Identification of the series of essential radio test suites	CE NBnr	CE NBnr ⓘ
IV	Technical construction file	Terminal equipment	Radio equipment including a transmitter not complying or only partially complying with harmonised standards	Opinion on the conformity of the equipment based on the review of the technical construction file established by the manufacturer	CE NBnr	CE NBnr ⓘ
V	Full quality assurance	All equipment covered by the R&TTE directive		Certification of the manufacturer's quality system	CE NBnr	CE NBnr ⓘ

Source: "Obligations associated with the placing on the market of radio equipment and telecommunications terminal equipment (R&TTE directive)" EC



Notified Bodies

- Designated by Member States
- Member States verify that they demonstrate the required level of resources, competence, independence, impartiality and integrity. This is subject to surveillance at regular intervals.
- They identify essential radio test suites, review and give opinions on technical construction files, and assess manufacturers quality assurance systems
- They do not perform testing, prepare test reports, design equipment, or sign or issue a manufacturer's declaration of conformity.

Surveillance Authorities

- Appointed by Member States.
- May check and test products sampled in the market or distribution chain under their jurisdiction in accordance with national laws.
- Surveillance activities may be performed as a result of a complaint, random check or as part of a systematic programme.

Modified EU Regime – The Radio Equipment Directive (RED)

- Applicable from 2016
- Not applicable to fixed line equipment
 - Directives 2014/30/EU (EMC) & 2014/35/EU (Low voltage)
- Improved market surveillance
- Essential requirements - addition for certain classes of equipment, of the possibility of requiring interworking with accessories, such as chargers, and the support of features to ensure that software can only be loaded into the radio equipment if the compliance of the combination of the radio equipment and software has been demonstrated
- Conformity assessment procedures:
 - Internal production control
 - EU-type examination that is followed by the conformity to type based on internal production control
 - Full quality assurance
- From 2018 the European Commission will be able to require the registration of radio equipment within those categories of equipment for which there is a low level of compliance with the essential requirements within a central system prior to the equipment being placed on the market.

United Arab Emirates

- Telecommunications type approval scheme based on the adoption of European standards.
- The Telecommunications Regulatory Authority (TRA) of the United Arab Emirates operates a type approval scheme for radio and telecommunications terminal equipment [http://www.tra.gov.ae/type_approval.php]. Manufacturers or their representatives need to be registered with the TRA before submitting any applications for product type approval. Type approval applications consist of a Supplier Declaration of Conformity with supporting documentation.
- The TRA publishes technical specifications for type approval. The requirements are intended to ensure that the equipment:
 - does not cause harm to the general public or staff working on public telecommunications networks;
 - does not generate electromagnetic disturbance exceeding the level above which the device or other equipment cannot operate as intended;
 - has a level of immunity to the electromagnetic disturbance to be expected in the environment in which it is to be used;
 - makes efficient use of the radio spectrum; and
 - does not cause damage to or interfere with the correct working of a public telecommunications network.
- The technical specifications consist entirely of references to European Standards.

China

Three schemes all with individual marks:

- Radio Type Approval
- Network Access License (NAL)
 - Information, network, interconnection
 - Ministry of Industry and Information Technology (MIIT)
- China Compulsory Certification (CCC)
 - Harm to users
 - General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ)



Mutual Recognition Agreements / Arrangements (MRAs)

Overview

- Mutual
 - Riciprocal
 - Bilateral
 - Multilateral
- Recognition
 - Technical requirements
 - Testing laboratories and test reports
 - Certification bodies and certificates
- Agreement
 - Regulatory
- Arrangement
 - Voluntary

Aims

1 test, 1 report

1 audit, 1 certificate

Accepted everywhere

Benefits

- Avoids duplication of work in testing and certification
- Eliminates redundant and costly activities
- Products may be shipped to foreign markets without any further requirements for testing and/or certification, thereby reducing costs and time to market
- Facilitates trade by promoting transparency in market access and competition
- Reduces and minimizes non-tariff trade barriers

Benefits

- Regulators
 - Reduced resources required for certification
- Manufacturers
 - Lower barriers for market access
 - Increased certification process efficiency
- Conformity assessment bodies
 - Larger market
- Consumers
 - Greater availability of equipment at lower prices

Types of MRA

Between:

- Conformity Assessment Bodies
- Accreditation Bodies
 - International Laboratories Accreditation Cooperation (ILAC)
 - International Accreditation Forum (IAF)
- Governments
 - Binding e.g. Canada – EU & USA – EU
 - Non-binding e.g. Asia Pacific Economic Cooperation (APEC)

ILAC MRA

- Promotes the acceptance of accredited test and calibration results by establishing a network of mutual recognition agreements among accreditation bodies
- The accreditation bodies which are signatories to the ILAC MRA have been peer-reviewed and shown to meet ILAC's criteria for competence
- Tests results prepared by testing laboratories of one signatory are accepted by testing laboratories of all other signatories

International Accreditation Forum (IAF)

- Aims to:
 - Ensure that its accreditation body members only accredit bodies that are competent to do the work they undertake
 - Establish mutual recognition arrangements, known as Multilateral Recognition Arrangements (MLA), between its accreditation body members

ILAC & IAF

- Both recognize the following Regional Cooperation Bodies which have their own MRAs:
 - The European cooperation for Accreditation (EA)
 - The Asia Pacific Laboratory Accreditation Cooperation (APLAC)
 - The Inter-American Accreditation Cooperation (IAAC)

MRA between governments

- Single / Multi-Sector
 - Single sector e.g. Asia Pacific Economic Cooperation (APEC) MRA – telecommunications
 - Multi-sector e.g. Canada / European Union MRA - six sectors including EMC and telecommunications
- Bilateral / Framework
 - Bilateral e.g. Canada / EU MRA
 - Framework e.g. Asia Pacific Economic Cooperation (APEC) and Inter-American (CITEL) MRAs

APEC-TEL MRA

- Mutual Recognition Arrangement for Conformity Assessment of Telecommunications Equipment - in effect from July 1999
- MRA Implementation Guide – 2001
- MRA Guide for Manufacturers – 2001
- MRA Guide for Conformity Assessment Bodies - 2001
- MRA-ETR Equivalence of Technical Requirements - 2010

APEC-TEL MRA Partners

- Australia
- Brunei Darussalam
- Canada
- Chile
- People's Republic of China
- Hong Kong, China
- Indonesia
- Japan
- Republic of Korea
- Malaysia
- Mexico
- New Zealand
- Papua New Guinea
- Peru
- Philippines
- Russia
- Singapore
- Chinese Taipei
- Thailand
- USA
- Viet Nam
- ASEAN

MRA Pre-implementation (1)

- Review legislation, regulations and administrative procedures to determine if:
 - They permit recognition of MRA partners conformity assessment bodies (CABs)
 - They accept conformity assessment results prepared by MRA partners' CABs
 - Market surveillance procedures are in place

MRA Pre-implementation (2)

- Update or develop legislation and regulations to enable the implementation of MRA
- Develop MRA procedures
- Update or develop market surveillance procedures

Reference

- **Guidelines for the development, implementation and management of mutual recognition arrangements/agreements (MRAs) on conformity assessment of telecommunications equipment**
- https://www.itu.int/en/ITU-D/Technology/Documents/ConformanceInteroperability/GuidelinesMRAs_E.pdf



Summary

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- As a minimum:
 - All telecommunications equipment should meet requirements to ensure safety
 - Radio equipment should meet additional requirements to ensure no harmful interference with other equipment
 - Approval regime can be:
 - A fully-defined unique national scheme
 - or
 - Adopt (in full or in part) the requirements of other countries or regions
 - and
 - MRAs can be entered into in either case



Thank You