

Workshop on NGN Conformance and Interoperability Testing Centre(s)

2-4 August, 2010 Nairobi, Kenya



WTSA-08 Resolution 76: the ITU-T approach to Conformity Assessment, Interoperability, Capacity Building and Test Centres

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Converged new services: desire for Interoperability



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From triple-A to multiple-A in an interoperable NGN world ?



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The Standardization Gap



- Disparities in the ability of developing countries to access, implement, contribute to and influence international ICT standards
- Disparities in the representation of developing countries could cause:
 - Persistence of the wider digital divide in ICTs (e.g., among different regions and groups within the society)
 - Unequal access to technology and the ability to use that technology

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ITU-T Mandate to Bridging the Gap



- PP-06 (Res. 123), WTSA-04/08 Resolutions 44, 17, 54, 59, 74
- ITU-T mandated to bridge the standardization gap between developing and developed countries
- Mandated actions include:
 - Measuring the Gap
 - Improve standards making capabilities
 - Assisting in enhancing efforts in standards applications
 - Human resource building

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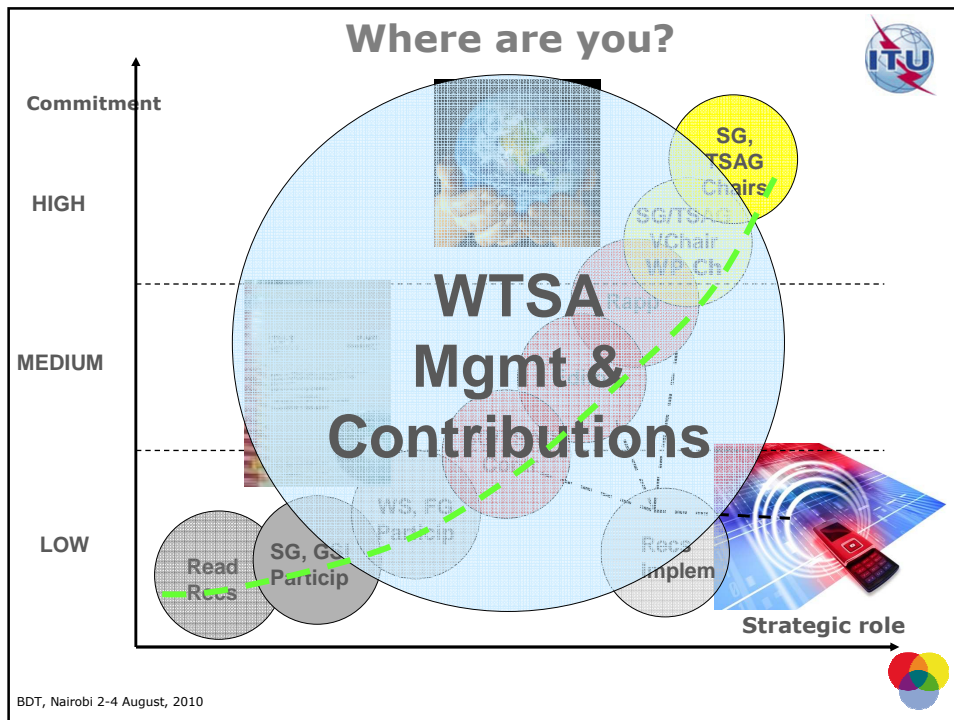
ITU-T Activities to Bridging the Gap



- Increase visibility, information, awareness, participation and collaboration
- Admission of Sector Members and Associates from developing countries
- Increase number of officials in ITU-T Study Groups
- Increase SG meetings in the regions
- Create regional groups
- Implement Resolutions adopted in favor of developing countries

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 2. Conformity
 3. Interoperability
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 5. Conclusions
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Some rationale for Resolution 76



- **supply of poor quality**
- **dangerous equipment**
- **not conformance to standards**
- **no interoperability**
- **equipment counterfeit**
- **Governments**
 - to ensure that appropriate technical regulations based on international standards, are in place and enforced in order to meet their obligations to protect the safety of their citizens using telecommunication equipment and services and to meet their requirements for quality of service.
- **testing facilities and building capacity** in the regions

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Effects



Impact on ITU:

- Erosion of the perceived importance of ITU as the place of choice to develop the full range of interoperable standards.

Reaction from Developing Countries:

- a plea expressed for ITU to help and to assist in achieving the requested level of conformity to standards and interoperability among vendors both nationally and internationally
- The need to implement a C&I capacity building program in the regions

ITU commitments:

- WTSA-08 Resolution 76: ITU-T proposing to do nothing more than that already done by other international organizations.
- WTDC-10 Resolution 47 : supporting and complementing the Review from the development sector point of view

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The WTSA-08 Res. 76 the WTDC-10 Res. 47 Council-09 and -10 decisions

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WTSA-08 Resolution 76 Johannesburg, October 2008

“Studies related to conformance and interoperability testing, assistance to developing countries, and a possible future ITU mark programme”

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Res.76: instructs the Director of TSB

- **identify and prioritize the problems** faced by developing countries related to achieving interoperability of ICT equipment and services
- to study the **overall effect on ITU and manufacturers, legal, national and international regulatory implications,** cost of set up and location of testing facilities, measures to build the necessary human resource capacities
- to carry out the **necessary studies,** also involving experts and external entities, with the **view to introduce the use of ITU Mark** as a **voluntary programme** permitting manufacturers and service providers to make a **visible declaration** that their equipment conforms to ITU-T Recommendations and to study the relevant financial and legal implications for the ITU-T and ICT industries
- to submit the **result of these studies to Council-09** for its consideration and required actions

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Res. 76 Resolves

- **ITU-T Study Groups to develop ITU-T Recommendations taking into account conformance and interoperability issues**
- **Conformance and Interoperability testing requirements shall provide for verification of the parameters defined in ITU-T Recommendations**
- **ITU-T to develop a programme to assist developing countries in capacity-building, training opportunities, and in the creation of regional/sub-regional test facilities**

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Conclusions on Res. 76



- Res. 76: meet the needs of Developing Countries for conformance and interoperability
- Conformity as a first step to increase the probability of interoperability between different equipment, manufacturers, vendors, service providers
- Identification of Labs able to carry out tests according to the ITU-T Recommendations requirements and training programs
- Voluntary based ITU conformity programme as a demonstration of conformance to ITU-T Recs and possible creation of an ITU-Mark: the "ITU inside" - concept that now is dropped.
- The increased business opportunities and benefits to both suppliers and customers, positive industry response

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TSB studies conducted with...



- Experts and External Organizations
- IEC, ISO,
- Regulators,
- Laboratories,
- Training institutions
- Governments
- UNIDO, WTO
- Accreditation bodies (ILAC, IAF, BIPM)
- Private sector, members and non-members of ITU



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The TSB Programme



- Conformity assessment:
 - first step to interop,
 - certification
 - conformity database
- ITU as facilitator for interop events to:
 - identify the interoperability problems
 - develop Interoperability test suites as needed
- Current international procedures (ISO/IEC - CASCO toolbox) adoption
- Conduct feasibility studies in developing countries to:
 - implement good conformity assessment practices
 - improve interoperability
 - build capacity
 - establish test centres
- Development of a business plan

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TSB Director's Recommendations endorsed by the Council-09



- Implement conformance assessment and interoperability events programme, including the creation of a conformance database instead of an ITU mark
- Creation of human resources capacity building opportunities
- Assist establishment of test facilities in developing countries
- Report to next Council on the effective implementation of the above.

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Cons from Members



- The database presents both legal and associated financial liability risks for the ITU and the ICT industry
- A step-by-step approach should be taken in order to take into account the concerns of the membership as ITU moves forward in implementing the action lines adopted by Council 2009
- The use of accredited test labs is time consuming and expensive, delaying users' access to technology and slowing global trade
- TSB should first prepare a business plan to establish the real costs, potential liabilities and measurable benefits to society before launching the ITU-T Conformity Database
- Test centres in developing countries, according to one contributor, would lead to confusion in the market place

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Pros from Members



- Interoperability as Mission for ITU (Res. 71 – Strategic Plan)
- Res. 76 intended to assist DCs and manufacturers should contribute to its implementation
- Examples of problems associated with interoperability and conformance of equipments and systems. Documentation submitted to TSB so far
- The conformance database would be exceedingly useful for operators and end users for whom equipment are manufactured. Good experience in this field is proven by existing DBs from other SDOs
- Confidence of users in the kind of equipment they buy is more important than how quickly they appear on the market
- ITU-T Recommendations must be studied in view of conformance assessment and interoperability testing as relevant
- Some of them already ensure interoperability of products provided by different manufacturers. For these Recommendations conformance and interoperability testing are complementary considering that conformance is the first step to enable interoperability.

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Problems

- **Yesterday:** limited negative effects thanks to preliminary and mandatory type approval / homologation tests
- **Today:** Concerns from end users, improvement of standards C&I testing are needed
- **Tomorrow:** Common actions required: end users, vendors, SDOs, regulators, int'l and reg'l organizations
- **Lack:** Effects on image, service, business, budget



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Preliminary results from studies on implementing Resolution 76



- **Need for ITU to facilitate** interoperability events in partnership (OMA, WiFi Alliance, WiMAX, IEEE-ICAP, ...)
- **Positive impact on**
 - **ITU** (mission, improve quality of Recommendations, ITU promotion, ITU conformity programme leadership)
 - **Industry** (time to market, reduced costs, widen market Mutual Recognition Agreements, no TBT issues)
 - **End users** (Regulators, QoS, interoperability benefits, legacy to existing infrastructure, wider market choice, savings, confidence in the products performance)
 - **Developing countries** (capacity building opportunities, regional and sub-regional type testing laboratories, bridging standardization Gap, promotion of a conformity testing culture)



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Conformity

Ability of a product to meet the requirement(s) of a standard

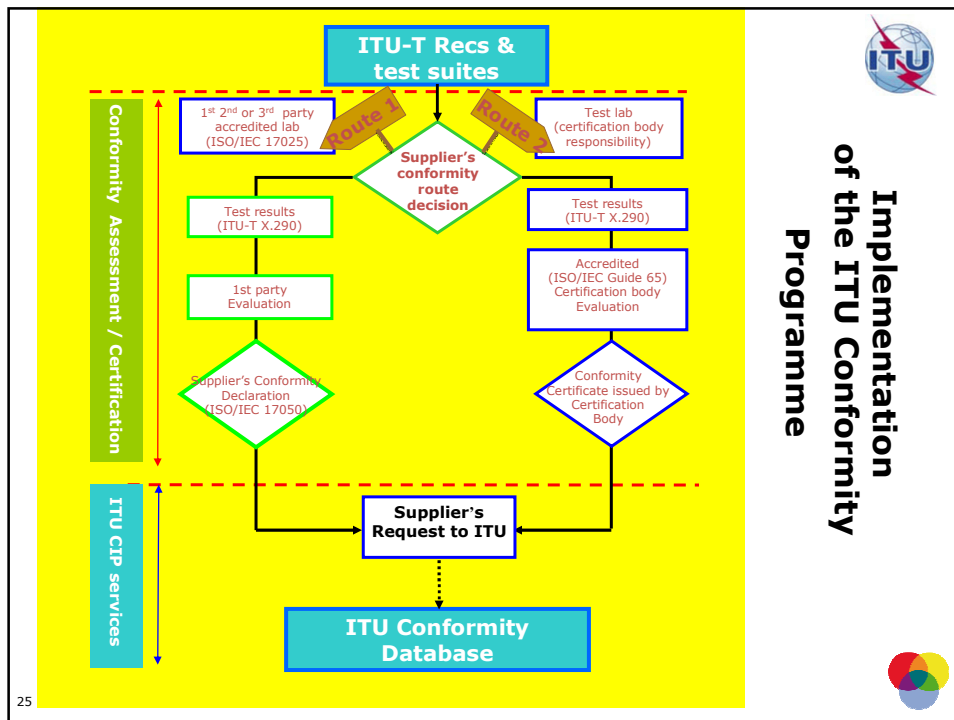
A first step to increase the probability of interoperability



The ITU C&I Programme: Testing

- **Voluntary basis & free** programme open to ITU members. Non-members may participate on a case by case basis waiting for public availability
- **Testing**
 - 1st , 2nd, 3rd party accredited labs conformity assessment
 - 3rd party accredited certifiers (any lab)
- **Supplier's Declaration of Conformity (SDoC)** (ISO/IEC 17050)





ITU Conformity Pilot Database

- Voluntary and free-of-charge tool permitting manufacturers and service providers to make a visible declaration that their equipment conform to ITU-T Recommendations.
- Information entered directly by vendors.
- Users advised that the DB contains only information provided by companies and that ITU is not in a position to verify the accuracy of the information received. Declaration of responsibility requested.
- The Pilot Database may provide information on applicable normative references by other standards organizations complying with Recommendation ITU-T A.5.

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The ITU Pilot Conformity Database: Example

Company	ITU code	Prod. Name	Product category	ITU-T Recs/Ed.	SDOs stand.s	Date	SDoC
Vendor A	C-12345	AH-1234	VDSL 2	G.992.2, G.995, GPON	IEEE, IETF, OIF	01.01.11	".pdf"
Vendor B							
Vendor C							

Search facilities for
any field

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Existing DBs from other SDOs



- **IEEE – ICAP Product Conformance Registry**
www.ieee-isto.org/icap-program/products
- **Open Mobile Alliance – Products Listing**
www.openmobilealliance.org/Application/ProductListing/products
- **FCC part 68** - www.fcc.gov/wcb/iatd/part68fags.pdf "The rules also provide for the development and maintenance of a publicly accessible database of approved TE and for labeling TE that have been shown to comply with the technical criteria. All approved TE are required to be listed in the database and to be properly labeled". The Administrative Council for Terminal Attachments (**ACTA**), joint sponsorship of the Alliance for Telecommunications Industry Solutions (**ATIS**) and the Telecommunications Industry Association (**TIA**), mandate "for maintaining a publicly accessible database of all approved TE"
- **WiMAX Forum Spectrum and Regulatory Database:**
www.wimaxforum.org/resources/wimax-forum-spectrum-and-regulatory-database
- <http://www.wimaxforum.org/certification/certified-product-showcase>
- **Wi-Fi certified products database:** www.wifi.org/certified_products.php
- **Global Certification Forum (GCF)** (mobile phones and wireless devices based on 3GPP standards) GCF's guiding maxim is "**test once, use anywhere.**"
http://www.globalcertificationforum.org/WebSite/public/home_public.aspx

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The TSB step-by-step approach

Res. 76 Conformity and interop tools	S-by-S STND Standardization needs	S-by-S FIN Financial issues	Res.47 Capacity building / test centres
Conformity Data Base and Interop events reports available to the public immediately	SDoC Completeness & liability advices, database layout	Evaluation of additional costs due to certification and impact (%) on the costs of products in the factory	Creating a conformity testing and interoperability culture in the regions: workshops
Promote conformity / interop testing and the ITU-T database. Inputs from any vendor and free access by end users	Continue monitoring of main C&I requirements from developing countries linked to applications and technology, neutrality	Evaluation of time increase (%) to conduct certified instead of non-certified testing	Status of the existing labs in regions. Type of testing labs Development of criteria to establish test centres in the regions
Create a C&I portal managed by ITU to provide a general overview on C&I and links to activities of other SDOs/Industry/regulators/Governments and to Labs	Comparison of test methods, creation of ITU reference test methods and alternative test methods (ITU/SDOs). Overlapping/duplication issues Stimulate MRAs in the regions	Analysis of the status of MRAs worldwide. Benefits of MRAs in terms of time to access markets and savings on unnecessary repeated testing worldwide.	Establishment of costs for the establishment / enhancement of labs in the regions and creation of regional networks
Establish a coordination with ILAC, IAF, BIPM, UNIDO, Financial Institutions and other SDOs	Study new / adapt existing test suites where needed and still not available.	Evaluate costs incurred by end users and vendors due to the lack of C&I	Establishing capacity building programs / technologies / teachers, events and costs in cooperation with industry, UNIDO etc...
Improve conformity data base according to vendors / users needs	Adapt easy and not expensive market surveillance tools	Evaluation of possible financial contributions by non members to input data in the ITU Conformity Database	Create criteria and methods to prepare RFPs for private and public entities (e.g. the Germany Project)
Improving interop capabilities / technologies and web pages	Create synergy users/vendors/regulators/SDO to improve the C&I system	Advice on a possible Business Plan	
Periodical review/streamline the process in function of the S-by-S approach	Study new tools to parallel the database and to give feedback to ITU-T SGs for standards review and studies.		

The Global Conformity and Interoperability Portal

- Links to Conformity Databases from all the SDOs on a reciprocal basis
- Links to ICT testing labs and organizations worldwide
- Repository of global MRAs for C&I
- Information on ITU and other SDOs Interop events
- Contributions on best practices





3

Interoperability

Ability of two or more systems or applications or network management products and services from different suppliers to exchange information and to mutually / fruitfully make use of it



IPTV Interop event



ITU-T Interop Event on IPTV 20 to 23 July 2010 Geneva, Switzerland

The first ITU-T Interop Event will demonstrate the state of maturity and industry adoption of ITU-T standards for IPTV.

Manufacturers of set top boxes, content servers and other equipment are invited to showcase their products and to test for interoperability.

Testing will take place 20-21 July, with vendors showcasing interoperability to potential customers (broadcasters and content providers) 22-23 July.

Internet Protocol Television, or IPTV, is a major business opportunity for telcos, content providers and existing broadcasters.

ITU's IPTV Global Standards Initiative has created standards that will encourage innovation, mask the complexity of services, guarantee QoS, ensure interoperability and ultimately help players remain competitive.

For more information visit: itu.int/itu-t/gsi/iptv itu.int/interop

What is an ITU-T Interop event?

ITU-T Interop events bring together developer engineers to test the interoperability of ITU-T standards and to be detected. Bugs and glitches therefore identified and resolved early in the standard development process. Participants can then showcase their products and interoperability with the products of other vendors.

What standards?

Targeted ITU-T Recommendations include: H.782, H.770, H.781, H.721, H.740, H.780, H.781, H.782, H.770

Write to us about this or future ITU-T Interop events at tdstampa@itu.int



Next ITU Interop events

- Singapore – IPTV – September 2010
- Geneva – G.hn ??? – November 2010
- India – IPTV – December 2010

**Interested Companies SDOs, Forums, Consortia
to contact TSB (interop@itu.int).**

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4

**Assistance to
Developing Countries:**

**Capacity Building and
Test Centres**

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WTDC-10 Resolution 47

(Hyderabad 2010)



“Enhancement of knowledge and effective application of ITU Recommendations in developing countries, including conformance and interoperability testing of systems manufactured on the basis of ITU Recommendations”

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WTDC-10 Res.47 – “*resolves*” linked to Res. 76



- to assist developing countries in capacity building / training in collaboration with ITU-T
- to assist TSB in conducting conformance assessment and interoperability testing events, preferably in the developing countries
- to collaborate with the Director of TSB to implement the actions endorsed by the ITU Council in 2009 on Resolution 76

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Capacity Building



- Technical Flyers
 - Highlight ITU-T Recommendations
 - Numbering, Naming and Addressing, VoIP, QoS & QoE, NGN, ASON, B-PON, CWDM, DSL, G-PON, Optical Fibres and Cables, OTN, OTS, Synchronization over packet networks, Accessibility, H.264, H.350, Multimedia Communications, ASN.1, Security, IMT-2000, ...
 - Available at <http://www.itu.int/oth/T0B04/en>
- Technology Watch Reports (WTSA-08 Res. 66)
 - Survey the ICT environment, by identifying new/emerging technologies and assessing their likely impact on future standardization work and on developing countries.
 - Recent topics include: Cloud Computing, The Future Internet, NGNs and Energy Efficiency, ICTs and Climate Change, Remote Collaboration Tools, Intelligent Transport Systems
 - Available at <http://www.itu.int/ITU-T/techwatch/>

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Capacity Building on C & I



- Develop expertise in conformity and interoperability testing
- Implementation of the ITU Conformity Pilot Database
- Close cooperation with BDT
- Plan to organise tutorials at established test centres around the world
- Joint workshops planned with UNIDO
- Interoperability events

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Establishment of conformity test centres in developing countries



- Need to build partnerships with relevant organisations: UNIDO, ISO (CASCO), IEC, IAF and ILAC
- UNIDO has a programme to assist in establishment of accreditation bodies and conformity test centres in developing countries
- UNIDO offer of collaboration
- Evaluate the opportunity to create an ITU Regional Lab Grid

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The ISO/CASCO Toolbox



- The CASCO toolbox consists of 27 documents covering:
 - Vocabulary, principles and common elements of conformity assessment
 - Code of good practice
 - Product, system, and persons certification
 - Testing, calibration, inspection, marks of conformity
 - Supplier's declaration of conformity, accreditation, peer assessment, and mutual recognition arrangements

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The ISO/CASCO Toolbox – 40

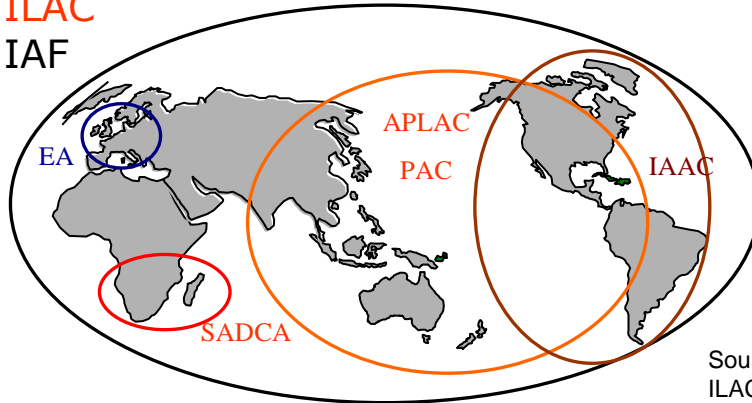


International Laboratory Accreditation Cooperation

International Accreditation Forum



ILAC
IAF



Source
ILAC

- APLAC Asia Pacific Laboratory Accreditation Cooperation
- EA European cooperation for Accreditation
- IAAC Inter-American Accreditation Cooperation
- SADCA Southern African Development Cooperation for Accreditation

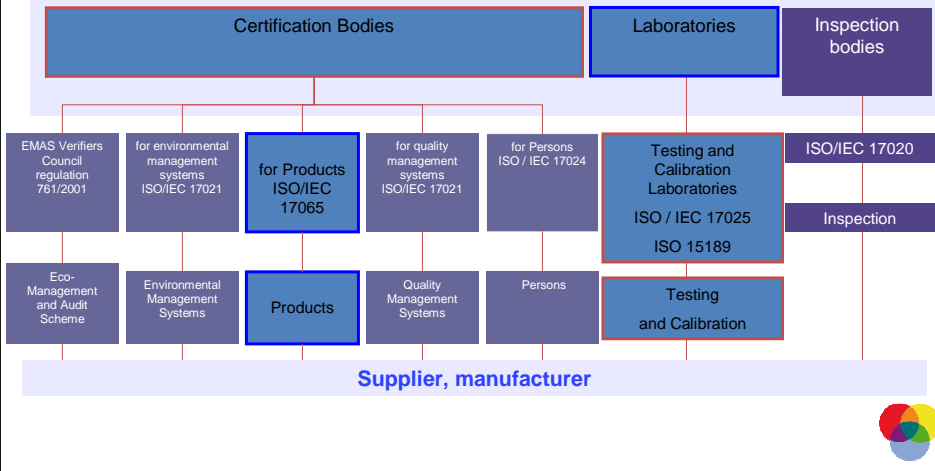
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Standards for Accreditation



ISO/IEC 17011 Accreditation Bodies for:



CASCO Standards in Progress



- ISO/IEC **17021 Part 2** (CASCO WG 21), Conformity assessment — Requirements for **3rd party certification auditing of management systems** (**DIS – Dec. 2010**)
- ISO/IEC **17065** (CASCO WG 29), Conformity assessment — Requirements for certification bodies **certifying products, processes and services** (**CD - 2010**)
- ISO/IEC **17024** (CASCO WG 30), Conformity assessment — General requirements for bodies operating **certification of persons** (**WD - 2012**)
- ISO/IEC **17020** (CASCO WG 31), Conformity assessment — General criteria for the operation of various types of **bodies performing inspection** (**WD - 2012**)
- ISO/IEC **17067** (CASCO WG 32), Conformity assessment – Fundamentals of **product certification** (Product scheme development) (**WD - 2012**)
- ISO/IEC TS **17022** (CASCO WG 33), Conformity assessment – Third party management system **audit reports** (**WD - 2012**)



The Conformity Assessment



- A global framework for conformity assessment will increase consumer and regulator confidence by:
 - Providing a common interpretation of test results
 - Providing a mechanism for acceptance of certificates and reports
 - Achieving consistency and building confidence in products and services
 - Applying to International Standards a principle of neutrality
 - Defining good practices for market surveillance.





5

Conclusions

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What we said

- **Resolutions 76(ITU-T) and 47(ITU-D) : the reply to the needs of Developing Countries about conformity, interoperability and capacity building.**
- **Conformity able to increase probability of interoperability**
- **A voluntary based and free pilot conformity database ready to be populated in the ITU-T website**
- **TSB committed to the implementation of the Res. 76 requirements**
- **Capacity Building activities and creation of test centers started in cooperation with the BDT**

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Useful links

- **[ITU-T Conformity and Interoperability](http://www.itu.int/C&I)**
www.itu.int/C&I
- **[ITU-T Conformity](http://www.itu.int/conformity)** : www.itu.int/conformity
- **[ITU-T Interoperability](http://www.itu.int/interop)** : www.itu.int/interop
- **[ITU-T Workshops and Seminars](http://www.itu.int/ITU-T/worksem/index.html)**
www.itu.int/ITU-T/worksem/index.html
- **[ITU-T News](http://www.itu.int/net/ITU-T/info/news.aspx)** www.itu.int/net/ITU-T/info/news.aspx

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Conformity and Interoperability
The elements to provide the desired level of
Quality of Service at an acceptable cost

Developing Countries to learn about testing to
actively participate in the approval of
equipments both in the region and in the factory
premises

Labs to follow ISO/CASCO standards for
accreditation and mutual recognition
agreements

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