ITU-D Regional Development Forum "NGN and Broadband, Opportunities and Challenges"

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WTSA-08 Resolution 76: Conformance and Interoperability testing

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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

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

WTSA-08 Resolution 76

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

Why the Res. 76

- Addressing interoperability is one of the very reasons for founding ITU

- Major concerns were raised at WTSA-08, especially in developing countries;
  - **lack of conformance** and/or interoperability of telecommunications equipment being placed on the market.
  - supply of **poor quality** equipment and services (=> QoS)
  - **counterfeit** equipment
  - lack of **legal framework** and effective systems to ensure that appropriate technical regulations, based on international standards, are in place and enforced in order to meet the obligations to protect the safety of citizens using telecommunication equipment and services and to meet their requirements for quality of service

- Need of developing countries to be assisted in deploying testing facilities and building capacity facilities in the regions

- Other standards bodies have already introduced a number of activities to address conformity and interoperability and are far ahead of ITU.

Res.76: instructs the Director of TSB

- in cooperation with BR and BDT, to **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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TSB studies with...

- Experts and External Organizations (IEC, ISO, TIA, ANSI, ETSI, Regulators, Laboratories, Governments, UN Agencies)

  - Three ITU Sectors and Legal Affairs Unit
  - Representatives of Administrations,
  - Experts in training, testing, certification, market analysis
  - Representatives of Regulators and Industry
  - Participation in and organization of events worldwide to disseminate and gather information
  - International Organizations (WTC, UNIDO,…)

Open Consultation on Conformance Assessment and Interoperability Testing
Geneva, 20-21 July 2009

- Provide developing countries an opportunity to express their concerns about the lack of conformity and consequently of interoperability in products and services, with any negative effects this has on the quality of service of networks;
- Consider the effects that Resolution 76 could have on testing activities performed by industry and the associated activities to be put in place in ITU;
- Illustrate global best practices in terms of conformity assessment, interoperability and certification procedures performed by leading organizations and the role of regulators;
- Consider the possible implementation of an ITU mark programme as a way to permit industry to show that equipment and services conform to one or more of the ITU-T Recommendations; and
- Evaluate the likely economic effects on manufacturers and end-users from the application of the conformance and interoperability assessment.

ITU programme fundamental concepts

- **Voluntary basis** programme
- Conformity assessment tests may be performed in 1st, 2nd, 3rd party accredited laboratories
- Either **Supplier's Declaration of Conformity (SDoC)** using accredited test laboratory (ISO/IEC 17025 and 17050 applies), or **Certification** using accredited certification bodies (ISO/IEC 17065 applies)
- **Participation in ITU-organized interoperability events**
- ITU public **database** of equipment/services **conforming to ITU-T Recommendations** or showing **successful participation in ITU interoperability events**
- **ITU licensed acronym enabling vendors to give visibility to the demonstration of conformance / interoperability with respect to ITU Recommendations** in the context of the ITU Scheme
- The ITU Conformity and Interoperability Programme (ITU-CIP) may **stimulate and develop the culture of conformance assessment testing, capacity building and surveillance worldwide** in particular in developing countries

The Vendor

■ *receives a certificate issued by an accredited certification body indicating its equipment has been tested to show conformity to ITU-T Recommendation(s), or*

■ *provides his own Supplier's Declaration of Conformity (SDoC), or*

■ *demostrates that some or all the functionalities of its equipment duly interoperate with others from different vendors,*

■ *may request ITU, on a voluntary basis, to give visibility to such successful results by populating the ITU database for conformity and interoperable products.*

The ITU-T Study Groups

Study Groups are making progress to develop the necessary Recommendations for conformity and interoperability testing
(eligible Recommendations living list) .

SG16 meeting October 09 has proposals from Brazil and Singapore to develop test suites for IPTV.
SG17 is studying new test methodologies for conformity assessment activities for the BioAPI (Biometric Application Programming Interface) different from the ISO/IEC 24709.

There is no point in developing test suites if ITU does not give some recognition to manufactures which have their equipment tested to ITU-T Recommendations.

Considerations from studies (1)

- ITU/TSB explored and progressed a number of actions. Preliminary results:

  - Need of "**Certified/Accredited**" conformity assessment and interoperability testing as part of a **voluntary programme** to demonstrate compliance of products to standards
  - **Mutual Agreements**: need to establish **reciprocal international or peer-to-peer recognition** of laboratories and certifiers to reduce costs of multiple repeated testing and to avoid the creation of barriers to trade (ILAC, IAF), where **two or more partners recognize respective laboratories to have equivalent competence to carry out the same conformity assessment tasks**

Considerations from studies (2)

- **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). Study Group 16 in October meeting received proposals from Brazil and Singapore to develop test suites for Internet protocol television (IPTV).
  - **Industry** (increased business opportunities (time to market, reduced costs, widen market Mutual Recognition Agreements, no TBT issues)
  - **End users** (Regulators, QoS, interoperability benefits, legacy to exhisting 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 and digital divide, promotion of a conformity testing culture)

The ITU Conformity and Interoperability Programme (ITU-CIP)

Having benefited from advice from experts from all regions, and the open Consultation Meeting it has been decided to adopt a simpler approach different from the creation of an ITU Mark:

- To not to propose the introduction of an ITU Mark for various reasons.
- ITU will establish a database where manufacturers could place information regarding the conformity of their equipment to ITU-T Recommendations following the example of other standards bodies .
- ITU does any of this testing or certification itself but that existing accredited test centres or accredited certification bodies would be used.
- ITU to provide links to the databases of other standards bodies especially those have test results on ITU Recommendations.

Council-09 endorsement

Recommendations

- TSB will establish a database as a repository for companies' information on conformity.
- TSB will investigate industry's interest in participating in interoperability events, possibly in partnership with other standards bodies or forums, and will establish a database for information on these events.
- TSB will collaborate with BDT on the necessary capacity building on conformity and interoperability, and help establish test centres in developing countries.
- the Director TSB in collaboration with the Director BDT will develop a business plan for the long-term implementation of these programmes and report back to the Council, identifying budgetary expenditure and potential income. This will depend very much on the potential demand for these services.

Database possible contents

- Company: link (P)
- ITU product code: (P)   **ITU C/I-1234567**
- Product : link (P)
- Products Categories (P)
- ITU-T Recommendations: link(s)(P)
- Test methods references (N)
- List of tests performed: (N)
- Laboratory/Certifier data (N)
- SDoC / Certification data (N)
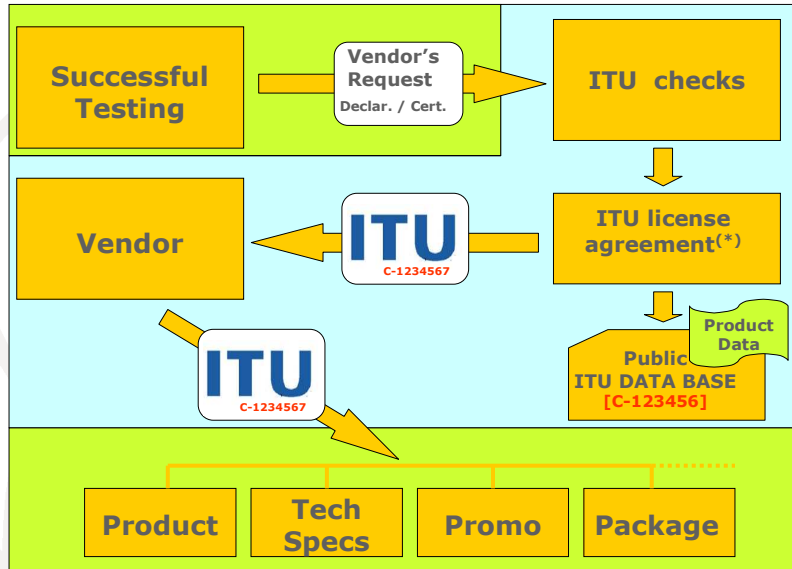- Others…

The ITU Conformity and Interoperability Programme (ITU-CIP): capacity building and test centers

- The ITU-T Secretariat (TSB) will implement the proposals on human capacity building in close collaboration with the BDT considering that it is a very complex and demanding task from the financial as well as human resources point of view :

  - assign more resources
  - hold workshops and tutorials on conformity assessment and interoperability building on the BDT project on International Telecommunication Testing Center.

- The ITU-T will assist in the establishment of test facilities in developing countries starting from the most poorly served such as Africa, Arab States and Latin America. Cooperation with international institutions is planned (UNIDO, ILAC, IAF,…)

The ITU Conformity Programme

Successful Testing

Vendor's Request Declar. / Cert.

ITU checks

ITU C-1234567

Vendor

ITU license agreement(*)

ITU C-1234567

Public ITU DATA BASE [C-123456]

Product Data

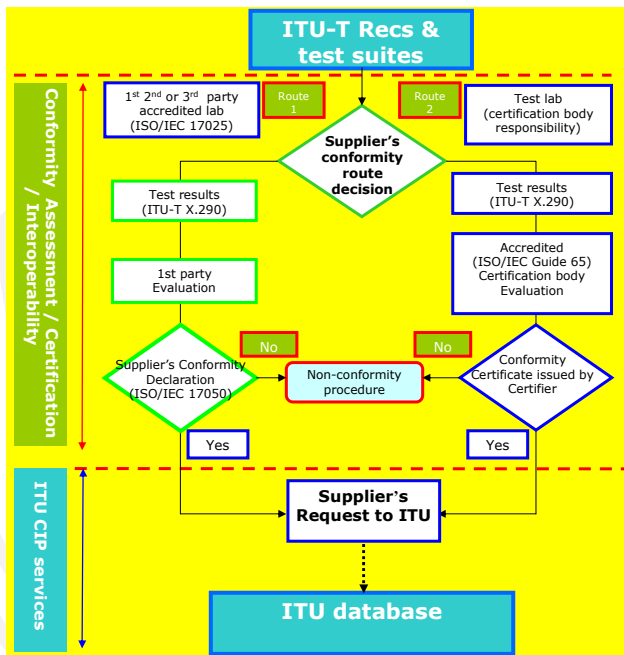**Product**   **Tech Specs**   **Promo**   **Package**

(*) - Condition of ITU's authorization to use the ITU acronym in the context of the Programme: the licensee should be required to defend and indemnify the ITU against any claims and to hold ITU harmless from any loss, demand, action or liability in relation to the use of the acronym.

Possible Implementation of the ITU Conformity and Interoperability Programme

ITU-T Recs & test suites

Conformity Assessment / Certification / Interoperability

1st 2nd or 3rd party accredited lab (ISO/IEC 17025)

Route 1

Supplier's conformity route decision

Route 2

Test lab (certification body responsibility)

Test results (ITU-T X.290)

Test results (ITU-T X.290)

1st party Evaluation

Accredited (ISO/IEC Guide 65) Certification body Evaluation

No

Supplier's Conformity Declaration (ISO/IEC 17050)

Non-conformity procedure

No

Conformity Certificate issued by Certifier

Yes

Yes

ITU CIP services

Supplier's Request to ITU

ITU database

Supplier's Declaration / Certification – Risk relationship

RISK

High

Low

3rd party Certification

Moderate

Supplier's Declaration

Need of 3rd party independent testing
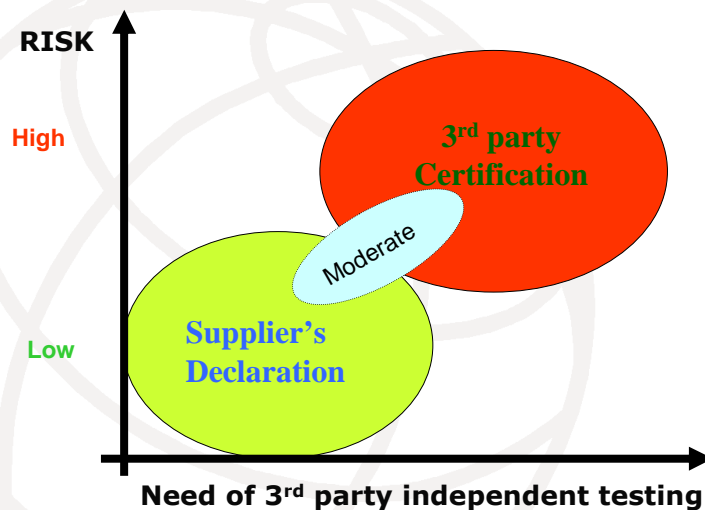
Action Plan

- **Launch of the CIP in January 2010**
- **Promotion campaign**
- **Set up of the ITU Data Base**
- **Legal affairs for the participation in the programme**
- **Work expected by the Study Groups**
- **Announcement to membership**
- **Establish agreements with partners: UNIDO, World Bank, ILAC, IAF, BIPM, SDOs (OMA, ETSI, WiMax, MPEG Forum…)**
- **Preparation of a common Standardization and Development sectors cooperation in the regions for training and set up of CIP Labs**
- **1st ITU Interoperability event (asap)**
- **Preparation of a Business Plan (y201x)**

Draft timing Plan

Item	Topic	NOV 09	DEC 09	JAN 10	FEB 10	MAR 10	APR 10	MAY 10	JUN 10
G1	Council-10								
G2	Council report								
G3	TSAG-10								
G4	CIP promo								
G5	START CIP & web								
G6	CASCO toolkit study								
R1.1	ITU Data Base								
R1.2	Accept. Criteria								
R1.3	Products categories from SGs								
R1.4	LAU licence								
R1.5	Request form								
R2.1	Info to SGs								
R2.2	Circular to Members								
R2.3	1st ITU Interopevent								
R2.4	CIP Programme								
R3.1	-T & -D Plan For training								
R3.2	ILAC/IAF/BIPM MOUs								
R3.3	UNIDO & WB MOUs								
R4.1	Business Plan (y201x)								

Conclusions

- **Resolution 76** as a reply to the needs of Developing Countries for conformance and interoperability issues and capacity building

- **Conformity** as a first step **to increase** the **probability of interoperability** between different manufacturers, vendors, service providers

- **Voluntary** based ITU Conformity and Interoperability Programme (ITU-CIP) including conform products database and promotion of interoperability events also in partnership

- **"green light"** from the Council-09 to implement the recommendations proposed in the TSB Director's report

**Muchas gracias!
Unas preguntas?**

ITU Consultation on Conformance Assessment and Interoperability Testing
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- **A – The concept of the ITU conformity programme**
- **B – Interoperability problems**
- **C – International legal issues**
- **D – Mutual recognition agreements**
- **E – GMPCS**
- **F – Lessons from other marks**
- **G – Bibliography**
- **H – Definitions**
- **I – List of laboratories**
- **J – List of ITU-T Recommendations**
- **M – Report on the Consultation on conformance assessment and interoperability testing**
- **R.K. Siddhartha: Essentiality of ITU Mark**
- **Relevant template for contributions**
- **Arab proposal**
- **Julio Cesar Fonseca: Technical Regulations Manager: The certification and approval regulation from ANATEL - Brazil**
- **Regulation for telecom product certification and approval, ANATEL - Brazil**
- **Maria de Fátima N.C. Rosolem: CPqD and Julio Cesar Fonseca: Brazilian Structuring in Accreditation for Telecommunications Products ITU Mark (Res. 76) - ANATEL - Brazil**
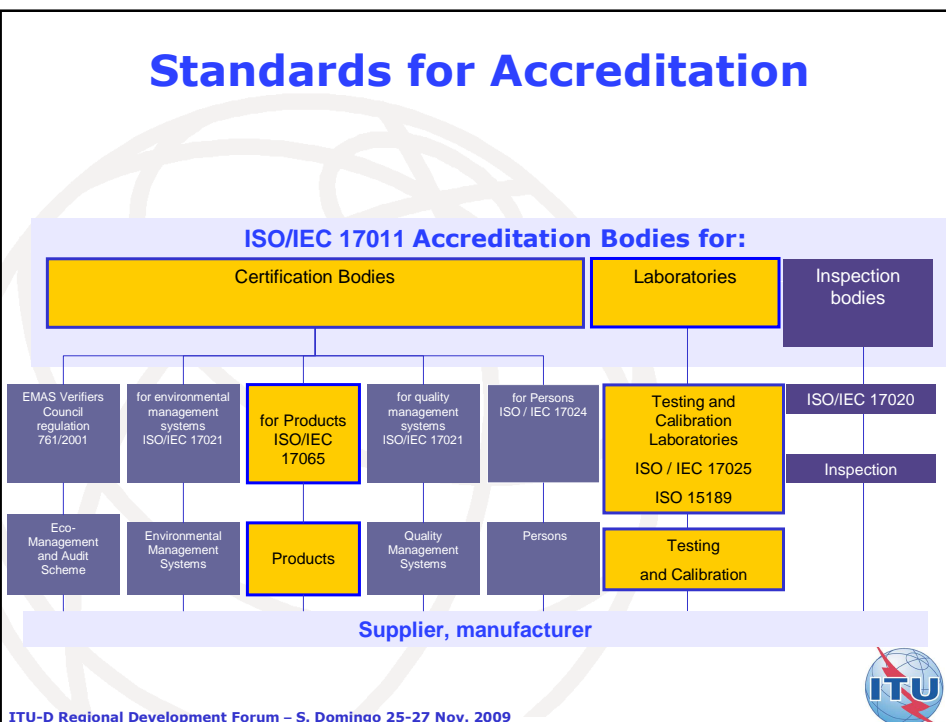
Latin American test laboratories

- Argentina Instituto Nacional de Technologia (INTI)
- Brasil Laboratórios da Fundação (CPqD)
- Brasil Laboratório de Eletrônica (Labelo)
- Brasil Instituto Brasileiro de Ensaios de Conformidade (IBEC)
- Brasil Instituto de Pesquisas Eldorado (IPE)
- Brasil Laboratório de Integração e Testes (INPE/LIT)
- Mexico Lattice Laboratorios A.C. (Lattice)
- Mexico Ingeniería y Verificación de Equipos y Sistemas de Telecomunicaciones, S.A. de C.V. (IVESTEL)
- Mexico Normalización y Certificación Electrónica A.C. (NYCE)

Standards for Accreditation

ISO/IEC 17011 Accreditation Bodies for:			
Certification Bodies		Laboratories	Inspection bodies

| EMAS Verifiers Council regulation 761/2001 | for environmental management systems ISO/IEC 17021 | for Products ISO/IEC 17065 | for quality management systems ISO/IEC 17021 | for Persons ISO / IEC 17024 | Testing and Calibration Laboratories ISO / IEC 17025 ISO 15189 | ISO/IEC 17020 |
| Eco-Management and Audit Scheme | Environmental Management Systems | Products | Quality Management Systems | Persons | Testing and Calibration | Inspection |

Supplier, manufacturer