# The ITU Conformity and Interoperability

# NO WAY !

*No Standards or  Conformity to Standards?*

- *Poor products performance, forget requirements !*
- *Poor products on the market*
- *No difference between original and counterfeit equipment*
- *Poor quality or no service*
- *Company image & market share*
- *Interoperability ? Good luck !!*

*Poor or no broadband services to peoples*

# Interoperability for the 21ˢᵗ century global digital economy

- Developing countries experiencing huge interoperability problems and **_rising frustration_** and demand action by the ITU to redress the **_interoperability dilemma_**

- Results in **_delays_** in full participation in the **_global digital economy_** and impact on social development

- Delivery of e-services requires global standards and **_secure interoperable transport platforms_**

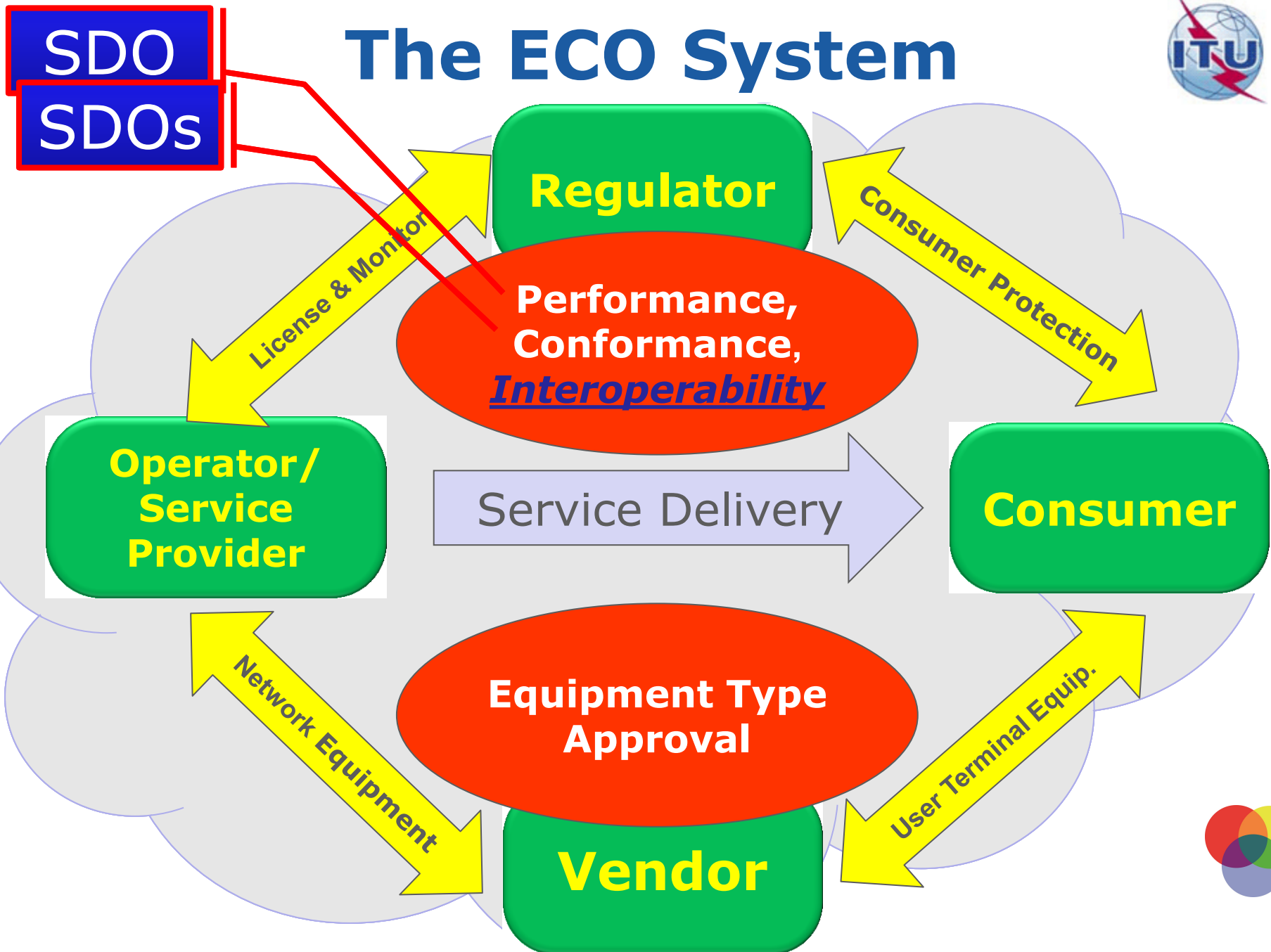# Interoperability for a true Access to Broadband

- ITU's global responsibility to **ensure the interoperability** and efficiency of international telecommunications;

- Growing **concerns** about and evidence of **non-compliance** with ITU-T Recommendations on **performance, safety and interoperability**;

- **Counterfeit or illegally imported** non-compliant and poor quality products, in particular in developing countries;

- Need to **facilitate market penetration** by avoiding multiple testing and certification, resulting from **regulatory and customer reactions to the risks of non-compliance**

# The ECO System



SDO
SDOs

Regulator

Performance, Conformance, *Interoperability*

License & Monitor

Consumer Protection

Operator/ Service Provider

Service Delivery

Consumer

Network Equipment

Equipment Type Approval

User Terminal Equip.

Vendor

Source: *dr. Roman Kužnar, Sintesio, (Matej Žontar, SIQ) ITU CIS/EU CIT Forum*

# Lack of Interoperability: Network Integrator

| Equip. Category | Problem | Main Reasons | Effects |
|---|---|---|---|
| Analog Voice Gateway | Can't forward dialed digits to next devise. | Feature not supported and not mentioned on Data Sheet although it is basic requirements for operation. | **Another device** should be used. |
| Voice interface Card | Caller ID feature is not working on certain mode of operation although it is globally mentioned on Spec. Sheet that it is supported. | New hardware interface card should be used. | The customer was unsatisfied and **switched to another vendor**. |
| Data Switch | Per Packet load sharing on multi-trunk lines is not working although it is mentioned in the Spec. Sheet | Function not available in current software release. | **Additional devices** need to be used to support the required function. |
| WiMAX Base-station | Antenna diversity should be supported... It is available on the configuration menu but not working. | The diversity is actually not working when it was enabled on the software | support Team stated that the diversity is **not working in the current software and may be active in next version** |

# Authority for Action from all the ITU's highest decision making bodies

- ITU World Telecommunication Standardization Assembly (WTSA-08) **Resolution 76**

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

- ITU Plenipotentiary Conference (PP-10) **Resolution 177**

- Radiocommunication Assembly 2012 **Resolution 62**

- ITU **Council Decisions**

# The ITU 4 "Pillars"

## The Standardization Sector side

❖ Conformity Assessment

❖ Interoperability Events

## The Development Sector side

❖ Capacity building

❖ Establishment of test centres in developing countries.

# The Telecommunication Standardization Bureau Side

❖ Conformity assessment
❖ Interoperability events

# Need of Conformance to Standards

- *Conformity key to increase the probability of interoperability*

- *SDOs to consider conformity and interoperability issues*

- *Improve quality of standards to increase quality of services/experience*

- *increase market opportunities*

- *reduce costs for operators, service providers, end users*

# C&I testing and ITU Recommendations

- Guidelines to Study Groups for test suites studies

- Study Groups
  - eligible Recommendations/technologies
  - "minimum set of interoperability-related parameters"

- Missing test suites:  ITU Study Groups also in coordination with other SDOs

- Minimize as much as possible the need of external resources and relevant funding sources.

# What To Test ?

- Only Parameters that may impact interoperability requirements of functionalities as needed by the end users and the market:

  ➢ Reducing time to approval

  ➢ Reducing testing costs

  ➢ Mutual recognition to widen protfolio and market opportunities

- ITU Study Groups to establish a minimum set of parameters as needed
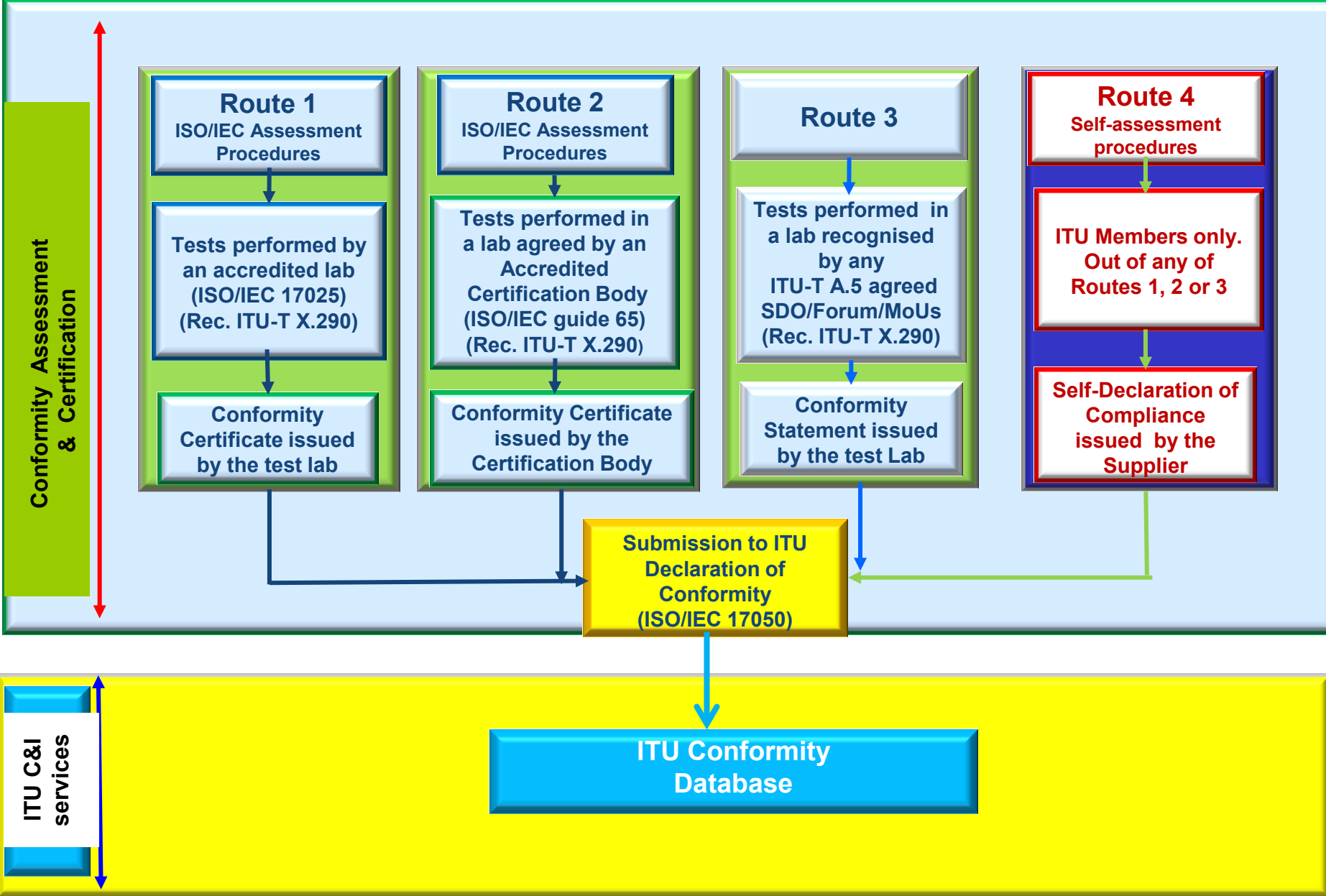
# The ITU Conformity Database

- *Informative and voluntary database* **open both to** *members and non-members* **for conforming products**

- **Adoption of international** *ISO/IEC standards* **and guidelines or self-assessment approach**

- *On-line inputs* **directly made by Companies**

- *ITU Liability*: **ITU is not participating in any testing/certification activities**

- **Products conforming to standards** *increase* **the** *probability of interoperability*

# Four routes to populate conformity DB

**Conformity Assessment & Certification**

## Route 1
**ISO/IEC Assessment Procedures**

Tests performed by an accredited lab (ISO/IEC 17025) (Rec. ITU-T X.290)

Conformity Certificate issued by the test lab

## Route 2
**ISO/IEC Assessment Procedures**

Tests performed in a lab agreed by an Accredited Certification Body (ISO/IEC guide 65) (Rec. ITU-T X.290)

Conformity Certificate issued by the Certification Body

## Route 3

Tests performed in a lab recognised by any ITU-T A.5 agreed SDO/Forum/MoUs (Rec. ITU-T X.290)

Conformity Statement issued by the test Lab

## Route 4
**Self-assessment procedures**

ITU Members only. Out of any of Routes 1, 2 or 3

Self-Declaration of Compliance issued by the Supplier

**Submission to ITU Declaration of Conformity (ISO/IEC 17050)**

**ITU C&I services**

**ITU Conformity Database**

# How it appears the Database

| Company Name | ITU Code | Testing Route | Product | Category | ITU-T Recommendation (s) | SDOs |
|---|---|---|---|---|---|---|
| | | | | | | |
| Company | ITU-T-C3-0000154 | 3 | DSL-wifi Modem X3/1234 | ADSL | ITU-T G.992.2 (1999-07) ITU-T G.992.5 (2009-01) ITU-T G.994.1 (2007-02) | DSL Forum, ATIS (Alliance for Telecommunications Industry Solutions), IEEE (Institute of Electrical and Electronics Engineers) |

# Search in the database

**DISCLAIMER**

This database is not certified to be either accurate or complete, but only reflects the information that has been communicated to the ITU secretariat. The ITU secretariat has not verified the veracity or accuracy of such information, nor the relevance of the products to ITU Recommendations

**Search here**

| | |
|---|---|
| **Company:** | - All - |
| **Product Category:** | - All - |
| **Testing Route:** | - All - |
| **ITU Code:** | |
| **Product Name:** | |
| **ITU-T Recommendation:** | |
| **SDOs:** | |

[ Search ]   [ Reset ]

# Labs Search

**DISCLAIMER**

This database is not certified to be either accurate or complete, but only reflects the information that has been communicated to the ITU secretariat. The ITU secretariat has not verified the veracity or accuracy of such information. For additional information please contact the laboratory directly.

**Search here**

| | |
|---|---|
| **Laboratory Name:** | - All - |
| **Country:** | - All - |
| **Categories of tested products:** | - All - |
| **ITU-T Recommendation(s) Implemented:** | |
| **Product Name:** | |
| **Accreditation Status:** | - ALL - |
| **MRAs Status:** | - ALL - |

[ Search ] [ Reset ]

# 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 relevant prototypes, while a standard is being drafted. Bugs and glitches in the standard and prototypes are 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:
ITU-T H.701, H.721, H.740, H.750, H.761, H.762, H.770

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

# ITU Interop events

- Interoperability as the ability of **two or more systems** or applications or network management products and services from different suppliers or vendors to **exchange information and mutually to make use of it**.

- Interop events where **various manufacturers cross-connect** products to identify interoperability performance

- For interoperability the complexity to reach the goals is an issue that requires the **evaluation of all the stakeholders on a case by case basis**

- Due to different approaches to same subject by different vendors for **common "interfaces",** interoperability testing may result in **end to end performance** both for commercial services that for network monitoring and maintenance from the points of view of QoS and QoE

# Interop Events and promotional events

- ❖ **IPTV Testing**

  - ❖ **1st Event: Geneva, ITU headquarters, 20-23 July 2010**

  - ❖ **2nd Event: Singapore, 23-24 and 27 September 2010**

  - ❖ **3rd Event: Pune, India, 14-17 December 2010**

  - ❖ **4th Event: Rio de Janeiro, Brazil, 18-22 July 2011**

- ❖ **G.hn Testing: Geneva, Switzerland, 23-27 May 2011**

- ❖ **Promotional Events:**

  - ❖ **Showcasings: Dubai, UAE, 20-22 September 2011 and Telecom World-2011, Geneva, Switzerland, 24-27 October 2011**

  - ❖ **1st IPTV Application Challenge**

# ITU's Interop Events on IPTV comprise two parts

❖ **1st part: Testing – closed event**

   ❖ Two types of testing carried out

      ❖ Conformance testing: each company tests

         against a checklist

      ❖ Interoperability testing: one-on-one testing

❖ **2nd part: Showcasing – open event**

   ❖ Prospective customers invited

   ❖ Film crew, photographer and media team on site

   ❖ Workshops provide up-to-date information and know-how, etc.

# ITU Interop Events

❖ **Events in 2012**

    ❖ Interop Showcasing in WTSA-12, Dubai, UAE, November

    ❖ Possible IPTV Interop events (TBC)

❖ **Future events**

    ❖ IPTV, G.hn Interops to continue

    ❖ More possible topics, e.g. GPON, e-Health, etc.

    ❖ Further collaboration with other International Organizations

# ITU Customized Services for Interop Events

- **Event Management**:
  - Local arrangements (arranging sites with hosts, shipment, hotels, networking opportunities, visa support, etc.), Logistical arrangements (registration/payment, legal aspects (NDAs), etc.)

- **Technical Management:**
  - IT support, test bed, test session scheduling, etc.

- **Communication Management:**
  - Promotion, media involvement, press releases, event website, inviting prospective customers, etc.

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# The Telecommunication Development Bureau Side

❖ Capacity building
❖ Establishment of test centres and appropriate C&I Regimes including MRAs in developing countries.

Meeting with in-deep consideration for test centres and Capacity Building in the Regions

**Held**:
❖ Africa (Ghana)
❖ CIS (Moscow)
❖ Americas (Brasilia)
❖ Arab States (Tunis) Forum and Training
❖ Asia Pacific (Myanmar)

# Questionnaire on the Status of Conformance and Interoperability in the regions: Three main groups

**Variety of Equipment, services and providers**

# Questionnaire Outline

## June 2012 - 35 replies

- **Fixed and Mobile Networks –** (technologies, services, equipment)

- **Conformance and Interoperability**
  - ➢legacy, Impact of C&I problems, type approval strategies in place, recognition of marking schemes (FCC, CE, …)
  - ➢measures to mitigate C&I problems
  - ➢National Accreditation Bodies, Certification Bodies and Test Labs for Type Approval established?
  - ➢MRAs with other parties ?
  - ➢Market Surveillance procedures and practices

- **Training and Capacity Building initiatives**

- **Culture and Readiness** to participate in the ITU C&I Programme

# Conformance and Interoperability

| | |
|---|---|
| **Group 1 Limited** variety of equipment, services and providers | **Reported no problems – likely single operator**<br>Type Approval regime reported in place<br>No Type Approval  responsible body<br>Marking – recognized either a body recommended by service provider or well known Mark such as EC, FCC<br>No national accreditation, certification bodies or test labs,<br>No MRAs, No market surveillance , No ICT labs |
| **Group 2 Medium** variety of equipment, services and a few providers | New equipment and **legacy** –<br>**Interoperability**: signalling in core networks, equipment malfunctions, implementation of new features on all platforms – Affecting **QoS, customer satisfaction and loss of business** - Pre installation activities carried out to mitigate interoperability problems - Half of this Group have Type Approval regimes - Half have Type Approval bodies -**No national accreditation and certification bodies, No MRAs -No market surveillance** |
| **Group 3 Wide** variety of equipment, services and providers | **Longer lists of interoperability problems** such as: MSAN-Softswitch conformity, ISDN support, IMS core, software<br>**Economic impacts**: additional costs, company image, QoS, project delay, upgrade costs, extra testing costs<br>**Pre installation work** always done to **mitigate interoperability problems - Type Approval** regimes in place - Type Approval Bodies in place - Recognize EU, or FCC , or IC or all three Accreditation and certification bodies in place as well as test labs. **MRAs active - Market surveillance** in place |

# Training and Capacity Building

**Group 1**
Limited variety of equipment, services and providers

**Group 2**
Medium variety of equipment, services and a few providers

**Group 3**
Wide variety of equipment, services and providers

**Interested** in **follow-up** training/capacity building related to WTDC 2010 Res 47, WTSA 2008 Res 76, PP-10 Res177

Would **participate** in development of regional program in **capacity building** and **expert tutorials**

Interested in opportunities to **establish** national, sub-regional and regional **test centres**

Availability of ICT Labs to **host test events** or ITU activities

# Questionnaire: Overall results

- Highlighted *lack of interoperability*

- ITU to *provide assistance and relief*

- *capacity building* and access to expertise is an essential ingredient

- initiatives to promote the use of **global testable standards**

- *test events for* compliance and interoperability *welcome*

# Guidelines for Developing Countries for Establishing Test Labs in Different Regions

- ***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

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# Needs in Developing Countries for Test Labs

- Conformity Assessment Bodies to contribute to create an orderly telecom apparatus market place

- Once standards and test suites are in place, test labs can  check equipment for compliance

- Sharing test labs resources  amongst countries and regions may lowering overall costs while continuing addressing regional priorities

- A robust framework (following international procedures – ISO/CASCO) needed for trust and confidence in test results and among test labs

# Conclusions from  Guidelines

- Members to:
  - advise the ITU of **_interoperability problems_**
  - Regulators to establish market access requirements
  - assess  **_legislation and regulations_**
  - **_prioritize areas of concern_** for products and systems

- Establishment of Accreditation Bodies and approach to **_MRAs and MLAs_**

- Establishment of **_Test Centres_** on a regional basis, wide areas and possibly common infrastructures

# 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.

# New Guidelines on C&I (2013- 2014)
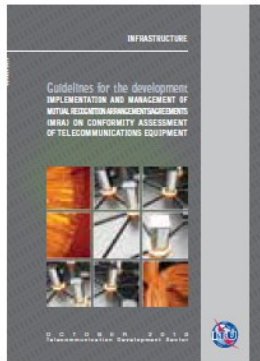
**Guidelines for the Development, Implementation and Management of Mutual Recognition Arrangements/Agreements on Conformity Assessment (2013)**

These guidelines promote the understanding and establishment of Mutual Recognition Agreements (MRAs)
MRAs on conformity assessment are intended to promote efficiency and resource sharing, as well as to streamline the flow of products among participating Parties such as ITU Member States and private sector organizations, such as testing laboratories
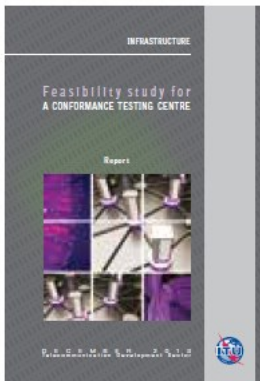
**Feasibility Study for the establishment of a Conformance Testing Centre (2013)**

This feasibility study describes environments, procedures and methodologies to be adopted to establish, manage and maintain a testing center covering different kinds of conformance and interoperability testing areas
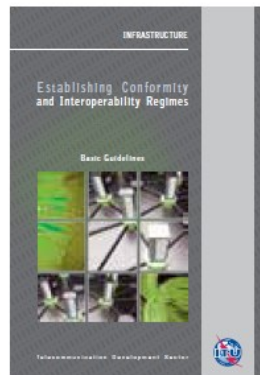
**Establishing Conformity and Interoperability Regimes – Basic Guidelines**

These Guidelines address challenges faced by developing countries as they plan and review their own C&I regimes. Aspects covered by this publication include, inter alia, conformity assessment procedures; legislation to promote an orderly equipment marketplace; surveillance; coordination across regulatory agencies; and relevant international standards.

# ITU Training activities on C&I

Dedicated exclusively to C&I  (http://www.itu.int/ITU-D/tech/events/index.html)

- Workshop on NGN Conformity and Interoperability Testing Centre(s), Nairobi (Kenya),
  2-4 August 2010

- ITU Regional Seminar for the Africa Region on C&I    Testing Center(s), Accra (Ghana), 4-6 July 2011

- ITU Regional Seminar for the CIS Countries on C&I Testing Center(s), Moscow (Russian Federation),  9-11 November 2011

- **Africa and Arab Regions, Tunis 5-7 Nov 2012**

- **ARB Region, Tunis 2-6 April 2013 (EMC Compatibility)**

- **Africa Region,Tunis 14-18 October 2013 (EMC Compatibility)**

- **Americas Region, Campinas, 24-28 June 2013 (EMC Compatibility)**

- **ARB Region, Tunis 17-22 March 2014 (Mobile terminals)**

- **AFR  Region, Tunis 23-27 June 2014 (Mobile terminals)**

- **Americas Region, Campinas May 2014 (Mobile terminals)**

# Capacity building and test centres

❖ ITU is implementing proposals on human **capacity building**

❖ ITU will assist developing countries in the establishment of test facilities and in cooperation with **international institutions**:

  ➢ UNIDO

  ➢ International Laboratory Accreditation Cooperation (ILAC)

  ➢ International Accreditation Forum (IAF),…)

  ➢ Labs and R&D institutions

# What's next in 2014
# Pillar 3

- Forum and Training on Conformance and Interoperability for ASP CIS Region

- Training on Conformance and Interoperability for Arab and Africa Regions

- Training on Conformance and Interoperability for AMS Region

# What's next in 2014 Pillar 4 for AFR region

- Workshop September 2014 for presenting the Assessment Study conducted during 2013 for SADAC countries for establishing a common C&I Regime

# What's next in 2014 Pillar 4 for ARB region

- Conformity and Interoperability Assessment on Regional Basis- Collaboration with Regional and Subregional organization: Assessment Study **for Maghreb Region**

- Guidelines for the development, implementation and management of Mutual Recognition Agreements (MRAs)

- Sub-Regional Workshop for **Maghreb Region** to promote the development and implementation of Mutual Recognitions Agreements

# Direct Assistance on C&I

- Objectives
  - Understanding of the challenges and identify strategies to increase the C&I infrastructure in the country
  - Facilitate universal access to ICT networks and applications/services by way of increased interoperability between equipment and systems from different vendors
  - C&I Programme and regional integration through the establishment of MRA or regional test centres to meet national needs
  - Draft roadmap to guide the implementation of further actions
- Experience in ASP Region: Mongolia (CRC)

# Memorandum of Understanding

- ITU has signed MoUs with testing centers in the regions to promote activities of the C&I Programme, such as capacity building events:

  - AFR and ARB: CERT (Tunisia)
  - AMS: CPqD (Brazil)
  - Europe: Sintesio (Slovenia)
  - Europe: Tilab (Italia)
  - CIS: ZNIIS (Russia)
  - ASP: ITU is looking for laboratory partners in the Asia-Pacific Region.

# WTDC-14, Outcomes on C&I

- Dubai Declaration
- Amendment of Resolution 47
- New ITU-D Study Group Question on C&I
- Objective 2, Output 2.2, Programme
- Regional Initiatives for AFR and ARB Regions

# Cooperation with ITU for C&I

❖ **Analysing the status of resources in the regions**

❖ **Finding regional agreements about possible locations for resources/ MRAs and testing capabilities**

❖ **Participation in Capacity Building activities, accreditation and certification**

❖ **Participation in the creation of a common C&I regime and regional test laboratories**

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**Thank You !**