C&I activities in the Americas – the Path Forward

Report on the Interactive Session of the ITU Forum on Conformance and Interoperability for the Americas region, held in Brasilia, Brazil, June 12th to 15th 2012

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Acronyms

AB	Accreditation body
ANATEL	Agência Nacional de Telecomunicações (Brazilian Agency of Telecommunications; Regulator)
C&I	Conformity and Interoperability
CPqD	Centro de Pesquisa e Desenvolvimento em Telecomunicações (Brazilian Telecommunications Research & Development Centre)
COPANT	Comisión Panamericana de Normas Técnicas (Pan American Standards Commission)
IAF	International Accreditation Forum
IEC	International Electrotechnical Commission
Inmetro	Instituto Nacional de Metrologia, Qualidade e Tecnologia (Brazilian Institute for Metrology, Quality and Technology)
ILAC	International Laboratory Accreditation Cooperation
ICONTEC	Instituto Colombiano de Normas Tecnicas y Certificación (Colombian Institute of Technical Standards and Certification)
ISO	International Organization for Standardization
ISO/CASCO	ISO Policy Committee on Conformity Assessment
ITU	International Telecommunication Union
MLA	Multi-lateral Recognition Arrangement (IAF)
MRA	Mutual Recognition Arrangement. (ILAC)
NYCE	Normalización y Certificación Electrónica (Mexican Electronic Standardization and Certification Association)
Norad	Norwegian Agency for Development Cooperation
NSB	National standards body
OHN	Organismo Hondureño de Normalización (Honduran Standards Body)
TSB	ITU Telecommunication Standardization Bureau
UNIDO	United Nations Industrial Development Organization

Introduction

The ITU is holding a series of regional Consultations and Forums on Conformity Assessment and Interoperability which are open to members and non-members of ITU. This report covers the interactive sessions held during the Forum on Conformity and Interoperability for the Americas region held in Brasilia, Brazil, from June 12th to 15th 2012, and addresses:

1) Feedback from the interactive working groups that were established during the Forum, and from the subsequent panel discussions
2) A comparison of the reports of the interactive sessions of this Brasilia Forum with those obtained during the International Workshop on Conformity Assessment for Asian Developing Economies held in Dhaka, Bangladesh on February 1st and 2nd, 2012 [1]

Forum Objectives

The Standardization and Development sectors of ITU are researching problems faced by developing countries concerning the conformity and interoperability of ICT equipment and services. ITU put in place the ITU Conformity and Interoperability (C&I) programme that, according to WTSA-08 Resolution 76, WTDC-10 Resolution 47 and Plenipotentiary PP-10 Resolution 177, has four main pillars:

- Conformity Assessment
- Interoperability events
- Capacity building
- Creation of test centres in the Regions

This event in Brasilia, held over four days, included presentations from representatives of international organizations (ITU, UNIDO, ILAC, and others), from national and regional organizations (COPANT, ICONTEC, CPqD, NYCE, OHN, ANATEL, Inmetro and others) and equipment manufacturers (including CISCO and Ericsson).

The key objective of the event was to stimulate discussion on the following issues in order to better implement the ITU C&I Programme:

- Why Conformity and Interoperability? Conformity to standards as a first step to increase the probability of interoperability between products from different vendors.
- Developing Countries: Concerns and needs, benefits of Resolutions on C&I, conformity assessment,
- Capacity building on C&I
- Creation of test labs in the regions, accreditation and certification, recognition agreement issues.
- Lack of conformity and interoperability: Economic and technical impact on operating companies, service providers, regulators and civil society.
- Industry views: Testing and certification, mutual recognition arrangements and agreements, impact on costs and time to market.
- Certification and testing: Global best practices for conformity assessment, interoperability and certification procedures performed by leading organizations. The role of international organizations, regulators and accredited certifiers.
- Improving the implementation of the ITU C&I Programme
- New activities in the ITU-T Study Groups to include C&I issues in new standards.

Participants

The 43 participants from 7 countries were representatives of operating companies, service providers, vendors, manufacturers, regulators, administrations, organizations from developing countries and civil society, accreditation bodies and conformity assessment bodies.

Methodology for Interactive Sessions

In the afternoon of the penultimate day of the Forum, delegates were divided into two multi-functional groups of approximately ten participants per group, with no single interest (e.g. standards body, certification body, accreditation body, industry or regulator) predominating in either group. The ITU and other international experts who were present at the Forum were divided between the two groups to act as facilitators/observers. Each group was requested to nominate a Chairperson and a Spokesperson, and to address all of the four pillars of the ITU C&I framework:

- Pillar 1 - Conformity Assessment
- Pillar 2 – Interoperability
- Pillar 3 – Capacity Building
- Pillar 4 - Assistance for the creation of Test Centres

The groups were asked to discuss each pillar and make proposals regarding the following issues:

- What are the main obstacles that need to be overcome?
- What actions are needed locally or regionally?
- What interactions are needed with international organizations?
- Are there any other factors that need to be taken into consideration?

On the final day of the Forum, each group presented its key findings and recommendations (see Annex 1) and these were subsequently discussed in a panel session with participation from the following:

Mr Nigel Croft (Moderator)
Mr Paolo Rosa (ITU)
Mr Riccardo Passerini (ITU)
Mr Bill McCrum (ITU Expert)
Mr Ouseph Padickakudi (UNIDO).

Results and Discussion

The following is a summary of the key outcomes and recommendations of the interactive working group discussions held on the penultimate day of the forum, and the panel discussion held on the final day.

A complete table of all the comments made by the working groups can be found in Annex 2.

It is important to recognize that there are significant variations in the current levels of maturity of standards development, conformity assessment activities and infrastructure in the different economies that took part in the forum, and these recommendations may not be applicable in their entirety to all the countries in the region. However, some common themes became apparent during the interactive sessions, and many were similar in nature to topics that had been raised during the event held in Dhaka, Bangladesh, in February 2012. These will be discussed later in this report.
The key topics and recommendations that emerged from the group sessions in Brasilia were:

1) **Need for better regional collaboration**. The establishment of an accreditation body, test laboratories and other conformity-assessment-related infrastructure can be expensive and time consuming. **Greater consideration should be given to making more effective use of regional or sub-regional resources by promoting better collaboration between the Latin America developing countries**, and creating centres of excellence.

   During the group presentations and plenary discussion, the question was raised about "national pride", and the extent to which every individual country really needs its own national infrastructure, or could achieve more cost-effective solutions by making use of other facilities in the region by establishing and/or reinforcing MRAs. .
   This is consistent with the guidance provided in the recent ITU Report "Guidelines for developing countries on establishing conformity assessment test labs in different regions" [2]
   In the context of regulatory systems MRAs can provide for the recognition of competence of third parties to carry out national regulatory/type approval processes such as testing and certification. MRAs can help avoid the cost of duplicative testing – once in the exporting country and again in the importing country – and promote transparency in the approval process by having the processes and procedures of the participating bodies exposed to discussion during the MRA negotiations……. MRAs are in fact a significant step towards achievement of the ultimate goal of the supplier community, namely, "one test, done once, valid worldwide". It is also worth noting that the World Trade Organization (WTO) Agreement on Technical Barriers to Trade strongly encourages WTO Members to engage in such agreements. [2]

2) **Development of sub-regional initiatives.** It was clear from the forum that there are four distinct groups of countries in the region, each with its specific characteristics that could possibly be grouped together for sub-regional initiatives, as shown in Table 1. During the panel discussions, there was general consensus that the focus of any pilot project to develop a sub-regional test centre (see Item 8 of this report) should be in the less-developed Spanish-speaking countries which are primarily located in Central America.

Group	Country (ies)	Maturity of C&I	Language
A	Brazil	Well-established regulations and C&I infrastructure. Little need for international assistance	Portuguese
B	Argentina, Chile, Colombia, Mexico	Established infrastructure, without significant needs for international assistance	Spanish
C	Other Spanish-speaking Central and South American countries (Bolivia, Nicaragua, Guatemala, El Salvador etc)	Little or no C&I infrastructure; would benefit from international assistance and establishment of regional test centres, e.g involving the countries listed as group A or B above	Spanish
D	Other non-Latin speaking countries in the region (Suriname, French Guiana, Caribbean nations etc)	Little or no C&I infrastructure; would benefit from international assistance and establishment of regional test centres e.g involving the countries listed as group A or B above	English, French, Dutch (and others?)

Table 1 – Categorization of the Latin American countries identified during the Forum

3) **Need to develop an inventory of available resources**. It became apparent during the discussions that there already exist a number of test centres operating in the region (primarily in Argentina, Brazil and Mexico [3]), but these are not well known in other parts of Latin America, despite the fact that there are Accredited Certification Bodies operating in various countries in the region. Some of these have already been identified (see Table 2) [1,2], but not the specific capabilities of each centre. **It is recommended that a matrix be developed to show the current capabilities, in terms of location and tests that are offered, to serve as a basis for the development of additional capabilities, and/or additional local or regional centres as needed**. This could bring significant advantages to all concerned, as mentioned in the recent ITU Report [2]

"In concert with the desire on everyone's part to have the basic expertise and tools to assess compliance and deal with non-interoperability there is also a growing recognition of a potential business opportunity associated with having test lab(s), expertise and facilities which could lead to becoming a test lab(s) of choice for regional needs. …….. Thus a test lab recognised in an MRA partner country with competitively priced services could potentially capture a major share of the conformity assessment business amongst the parties."

Country	Test Laboratory
Argentina	Instituto Nacional de Tecnologia Industrial (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)

Table 2 Test laboratories in the Latin American countries. Source: ITU Draft document [3]

4) **Prioritization.** It is not possible to do everything at once. **Each country needs to define its own national strategy, and to allocate resources based on clearly identified priority areas**. As mentioned in the recent ITU Report [2] "……..*there may be merit for some developing countries transitioning through the establishment and operation of testing related to mandatory requirements such as spectrum masks, signal power levels and safety requirements before attempting complex interoperability testing".* The priorities will of course vary depending on the degree of maturity of the individual economies.

5) **Partnerships with industry**. There were a number of comments during the forum about the need for greater industry involvement in standards and conformity assessment activities, and that **it would be useful to explore the possibilities for having public-private partnerships (PPPs), particularly for calibration and testing laboratories.** In addition, greater initiatives could be promoted by **vendors (equipment suppliers) to organize regional and sub-regional experience-sharing.**

6) **Role of international organizations**. The key topics that were identified, where international organizations such as the ITU, UNIDO and others could make the greatest contribution were:
   a. Facilitation of regional and sub-regional partnerships
   b. Providing expertise as needed on a regional basis
   c. Continue organizing C&I events in the region
   d. By producing harmonized protocol and test specifications in a timely manner for new technologies, applications and services
   e. By defining minimum requirements for interoperability
   f. By assisting in the establishment of RIF (Rule Interchange Format)
   g. Provide ongoing awareness-building, and examine the options of Public-Private Partnerships and e-learning packages for training

7) **Regulations**. In terms of the regulatory framework, there was general consensus that there are three important considerations:
   a. A **review, and simplification where needed, of existing regulations** to avoid undue regulatory restrictions on industrial expansion;
   b. **More effective implementation and deployment of existing regulations**, rather than "more regulation";
   c. **Better monitoring (market surveillance) mechanisms to ensure on-going compliance**.

   The responsibilities for each of these activities need to be clearly defined.

   There were numerous comments that the regulatory agencies are too slow and bureaucratic in their approach, and in some economies do not understand the complexity of interoperability considerations and/or consider these questions to be of low priority. The development and

adoption of regulations is, by its nature, not a quick process in any country. It is unlikely that this will be addressed in the near future.

8) **Funding for the establishment of test centres.** During the panel discussions, it was agreed that the first tangible step should be to identify possible projects for the development of regional test centres, and seek to implement at least one of these in the relative short term. In order for this to be successful, though, any such projects need to be realistic and sustainable in the long-term, with applicants being required to present a comprehensive business plan.

Bibliography

[1] (Draft) Report of the International Workshop on Conformity Assessment for Asian Developing Economies, held in Dhaka, Bangladesh on February 1st and 2nd, 2012 – UNIDO, 2012
[2] Guidelines for developing countries on establishing conformity assessment test labs in different regions – ITU, May 2012
[3] ITU Draft Information Document on Resolution 76 - Test Laboratories in Developing Countries

Annex 1

Detailed Considerations of the Working Groups

The following tables include all the comments and observations made during the interactive sessions of the forum. As authentic output data, they have been subject only to very minimal editorial changes.

ITU Pillar 1 - Conformity Assessment

A1.1.1 What are the main obstacles that need to be overcome?

- Obstacles tend to be political rather than technical
  - Lack of government commitment / political will
  - National priorities over-ride technical considerations
- Weak regulatory framework /Lack of Regulatory Framework with Lack of clear and unambiguous national standards
  - Inadequate legal framework
  - Lack of awareness at the policy-setting level
  - Few actions from the Regulator to transform concepts in reality
- Gaps in the infrastructure
  - Lack of national Conformity Assessment schemes, national bodies and Expertise
  - Poor availability of test suites (e.g. new tech)
- Inadequate priority-setting
- Lack of skills and competence
- Lack of market surveillance and enforcement to follow up on conformity assessment effectiveness
- Need to establish a minimum technical requirements

A1.1.2 What strategies/actions are needed LOCALLY and/or REGIONALLY?

- Governments need to consult stakeholders in the establishment of national CA schemes and establish milestones and time schedule
- Encourage participation and discussion of Governmental organizations in CA meetings
- Clear identification of needs
  - Better communication of "rules" (regulations, test methods to be used, etc.)
  - Commitment from the various institutions involved
  - Mapping of available infrastructure, and better promotion/utilization
- Create discussion forums for Vendors/Regulators/labs/operators/conformity assessment & accreditation bodies/standards bodies/end-users
  - Promote sharing of experiences and best practices in the region

A1.1.3 What strategies/actions/assistance are needed from international organizations?

- Promote and provide expertise / capacity building opportunities
  - Information-sharing about global initiatives
  - Better facilitation of partnerships
  - Assist in the establishment of national CA schemes
  - Continue holding C&I events in the regions
- Preparation of strategies with greater participation from developing countries

- ITU to produce harmonized protocol specifications and test specifications in a timely manner and develop ITU Recommendations "ITU Study Groups" in view of interoperability requirements for new technologies, applications and services.
- Suggest minimum technical requirements when studying and preparing standards

- Promote knowledge and awareness of CA approaches from different vendors

A1.1.4 Any other considerations?

- Any CA scheme should be based on the real needs of a country and be a "live" approach, stable enough for vendors/users interests and in the framework of international common understanding

ITU Pillar 2 - Interoperability

A1.2.1 What are the main obstacles that need to be overcome?

- Poor understanding of what interoperability means
  - Lack of understanding of the complexity of interoperability issues
- Costs and complexity of testing in presence of very different network scenarios/configurations
- Dealing with multiplicity of standards – no clearly defined set of minimum parameters
- Preparation of precise/accurate RFPs (Requests for Proposal)
- Lack of trust with vendors
- Bureaucracy in national organizations
- Inadequate regulatory framework
- Evolution of technology vs legacy in a regulatory environment

A1.2.2 What strategies/actions are needed LOCALLY and/or REGIONALLY?

- Identify more clearly the market needs
- Identify operators' offerings
- Identify test labs capable of promoting/hosting interoperability events
- Regulatory decisions need to be compatible with the evolution of technology
- Aim for compatible regulatory decisions within a region to minimize interoperability problems
- Establishment of Regional Interoperability Forums (RIF)

A1.2.3 What strategies/actions/assistance are needed from international organizations?

- Support to spread interoperability culture/awareness
  - Continue holding C&I events in the regions
  - Provide expertise / capacity building activities
- ITU to define a minimum mandatory set of requirements for quality of services for ensuring interoperable services
- Suggest minimum technical requirements aimed at interoperability
- Assist in the establishment of the RIF (Rule Interchange Format)
- Minimize technology options when studying standards for same purpose

ITU Pillar 3 – Capacity Building

A1.3.1 What are the main obstacles that need to be overcome?

- C&I is not a high priority for government
- Few opportunities to acquire expertise
- Lack of awareness of scholarships available
- Poor availability of local experts
- Difficulties in organizing forums - Costs, logistics, duration & hosts
- Poor availability of infrastructure/resources for "practical" training
- Definition of the scope for conformity assessment (technical specifications and testing)
- Weakness of local Conformity Assessment "culture" infrastructures (labs, CABs, NABs, Metrology / Calibration institutions

A1.3.2 What strategies/actions are needed LOCALLY and/or REGIONALLY?

- Better regional cooperation between institutions to share expertise
- Participation in national / international technical committees
- Academic courses on standards and CA with stakeholders
- Coordination of regional events on CA
- Supply Contracts should include requirements for courses to be made by vendors

A1.3.3 What strategies/actions/assistance are needed from international organizations?

- ITU to assess the type of training needed and provide the training including "hands-on" training
  - Assist the regions in holding CA regional events
- ITU should negotiate partnerships with regional laboratories and other institutions in a position to deliver training for specialists from the region
- Strategies to engage private companies in training activities
  - Promote Public-Private Partnerships
- Investigate and encourage long-term funding options
- Ensure continuous learning strategies
  - Develop E-learning packages

ITU Pillar 4 - Assistance for the creation of Test Centres

A1.4.1 What are the main obstacles that need to be overcome?

- Lack of information on existing regional facilities
- Reluctance to accept test results from other countries/labs
- Financial viability
    - Poor access to government and private funding
    - High cost of building a test lab (premises, human resources, accreditation, maintenance….)
- Lack of awareness and prioritization of domain (e.g., wireless, broadcasting, NGN, EMC, safety, ….)
- Availability of competent expertise (including local language skills)
- Political will

A1.4.2 What strategies/actions are needed LOCALLY and/or REGIONALLY?

- Develop clear regional and national Business Plans / Promotion / Marketing / choice of technologies
- Mapping of available services on a national or regional basis
    - Build upon existing infrastructures
    - Develop closer regional agreements
    - Create regional test centers
- Encouraging the signature of MRAs with other countries to avoid unnecessary duplication of testing services
- Establishment of competitive fee structure for services

A1.4.3 What strategies/actions/assistance are needed from international organizations?

- ITU and other partners (in cooperation with membership) need to identify policy and regulatory imperatives to accelerate the creation of C&I test centers and/or facilitate the establishment of MRAs in order to put in place the most appropriate C&I regime for each country.
    - Propose and facilitate signature of MRAs between countries based on regional framework for MRAs according to ITU guidelines on C&I.
    - Continue procuring MRAs
- ITU in cooperation with other international organizations (e.g. UNIDO) and other partners (e.g. CPqD, CERT, SINTESIO, etc.) to support development/strengthening of calibration and ICT test labs
- Assist in the implementation of existing guidelines

Annex 2

Comparison of the Brasilia and Dhaka interactive sessions

Topic	Brasilia	Dhaka	Comments
Need for better regional collaboration.	Provide more opportunities for sharing of resources, best practices, and to stimulate partnerships and mentoring opportunities.	Greater consideration should be given to making more effective use of regional resources by promoting better collaboration between the Asian developing countries, and creating centres of excellence in each country.	This is clearly an important topic for both regions, and one where ITU should focus its attentions
Development of sub-regional initiatives	Four clearly-distinct groups of countries were identified, based on language and maturity of C&I infrastructure, where sub-regional initiatives could be considered	This topic was not raised in the Dhaka event, probably due the significant heterogeneities of the countries in the region (including, but not limited to language).	
Mapping of available resources (labs; test centres etc)	It was recognized that there are a number of facilities in the region (primarily in Brazil, Mexico and Argentina) that are not well known in other countries. It is important to make an inventory of the capabilities of these different resources, in order to avoid duplication of efforts, fill the gaps and provide useful information to ITU Study Groups.	This was not raised as a significant point during the Dhaka discussions.	
Prioritization.	This topic was raised by several participants. Each country needs to define its own national strategy, and to allocate resources based on clearly identified priority areas.	There needs to be a national strategy, and several international experts and local workshop participants emphasized the need to allocate resources based on clearly identified priority areas.	This is clearly a topic where international inputs can help developing countries to define the best strategies for their own individual situation

Topic	Brasilia	Dhaka	Comments
Partnerships with industry	The possibility for the development of public-private-partnerships (PPPs) was also discussed and considered to be a good option	There were a number of comments during the workshop about the need for greater industry involvement in standards and conformity assessment activities, and that it would be useful to explore the possibilities for having public-private partnerships (PPPs), particularly for calibration and testing laboratories.	
Role of international organizations.	The key role of international organizations should be to simulate, facilitate and promote regional collaboration, and to develop sets of minimum requirements that could serve as a common base for local regulations.	The international organizations should consider nominating mentors from within their existing members to assist the national focal points and provide remote on-the-job training.	
Regulations.	There is a wide variation of regulatory environments within the Latin American region, but inputs from ITU and other international organizations on minimum requirements for interoperability would be welcomed.	The Asian developing countries depend quite heavily on government regulation to manage the market, and legislation tends to be complex and bureaucratic. The focus of the Dhaka workshop was on simplification and better implementation/market surveillance.	
Funding for the establishment of sub-regional test centres.	Identify possible projects for the development of regional test centres, and seek to implement at least one of these in the relative short term (possibly in the Spanish-speaking less-developed economies).	This was not raised as a significant point during the Dhaka discussions.	
Awareness-building.	Not considered as a major issue, but clearly there is a need to build awareness (and in particular within government) in the less-developed economies of the region.	This was a constant issue in all the discussions. There is a need throughout the region for much greater local (national) awareness-building about conformity assessment in general.	This was perhaps due to the predominance of Brazilian participants in the Brasilia Forum; Brazil has a well-established conformity assessment infrastructure

Topic	Brasilia	Dhaka	Comments
National focal points.	This topic was not raised as a concern in the Brasilia event.	There is a need to make much better – and more cost-effective – use of international collaboration initiatives by nominating (and investing in) national focal points for specific technical areas, and facilitating their participation in international activities.	In general, the standardization culture is stronger in Latin America, and there is a strong regional organization (COPANT)
Establishment of national mirror committees	This topic was not raised as a concern in Brasilia.	Establishment of national "mirror committees" to international standards and conformity assessment bodies as appropriate.	In general, the standardization culture is stronger in Latin America, and there is a strong regional organization (COPANT)
Financial considerations.	This topic was not raised as a concern in Brasilia.	Numerous requests were made from the participants for special discounted pricing policies to be put in place to subsidize the costs associated with membership of, and the purchase of standards from, the international organizations.	
Collaboration with academia.	This was not raised as a significant point during the Brasilia discussions.	Throughout the discussions, the role of academic institutions was emphasized, in particular: a. The need to incorporate standardization and conformity assessment considerations into higher education curricula; b. Greater involvement of academic institutions and their facilities in conformity assessment activities	