ITU C&I Programme
Key activities and main ITU outcomes which are related to the implementation of ITU C&I

The Business Plan for the ITU C&I Programme in 4 “Pillars”

The Standardization Sector side

❖ Pillar 1: Conformity Assessment
❖ Pillar 2: Interoperability Events

The Development Sector side

❖ Pillar 3: Capacity building
❖ Pillar 4: Establishment of test centres and C&I programmes in developing countries
Authority for Action: ITU’s highest decision making bodies

**Resolution 76:** ITU World Telecommunication Standardization Assembly (WTSA-12)

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

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

**Resolution 62:** Radiocommunication Assembly 2012


WTSA-12

**WTSA-12** designated the ITU-T Study Group 11 as a lead group on test specifications, conformance and interoperability testing which coordinates ITU-T activities related to the ITU C&I programme across all SGs and review the recommendations in the Conformance and Interoperability Business Plan for the long term implementation of the C&I programme.
Council-12

C12/48

- ITU-T to run a pilot of the conformity assessment programme for key technologies
- ITU-T study groups to identify further technologies (ITU-T Recommendations) for C&I
- ITU Secretariat invite labs/forums/consortia/SDOs to join the C&I Programme
- ITU Secretariat to consult study groups towards identifying and suggesting topics for future events
- ITU-T Study Groups to develop system roadmaps, identify and define the interfaces across which interoperability is needed
- ITU-T Study Groups should identify or develop use cases, application profiles and test plans to use for interoperability testing for Recommendations

The key outcomes related to Pillar 1&2 as of June 2014 (1/2)

- ITU-T SG11 developed a living list of key technologies suitable for C&I (http://itu.int/go/key-technologies)
- ITU-T SG11 launched the list of pilot projects of conformity assessment (http://www.itu.int/go/pilot-projects)
- ITU-T SG11 established the new work item Q.TL-rec-pro “Testing Laboratories recognition procedure” (Nov. 13)
- ITU-T SG11 established the CG on collaboration between ITU and TL (Nov. 13)
- ITU secretariat cooperated with the relevant SDOs (ISO, IECEE, DCMAS, ILAC, IAF, etc.)
The key outcomes related to Pillar 1&2 as of June 2014 (2/2)

- ITU conducted test events (e.g. from 2013 to 2014):
  - Conformance & Interoperability event of IMS UNI, IPTV (Bangkok, Sept. 13)
  - Continua Health Alliance Interoperability event on e-health (Geneva, Oct. 13)
  - Performance assessment of mobile phones in conjunction with HFT in a car against Recs. ITU-T P.1100/P.1110 (May. 14)
  - Interoperability of IMS-NNI, IoT (Aug. 14) (planned)

- ITU-T SG11 established the new work item Q.Int_speed_test “Unified methodology of Internet speed quality measurement usable by end-users on the fixed and mobile networks”

- There are available some new test specifications for IMS-NNI, benchmarking, NGN-UNI, etc.

- JCA-CIT extended the list of conformity assessment approaches

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ITU C&I Programme. Key activities and main ITU outcomes which are related to the implementation of ITU C&I Programme
**SG11 Action plan**

Principles of SG11 cooperation among other SGs

- Key ITU-T Recs. suitable for C&I
- Pilot projects which are based on key ITU-T Recs. suitable for C&I
- Reference table of all ITU-T Recs. and relevant test suites

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**The list of key Technologies for C&I (1/2)**

http://itu.int/go/key-technologies

The living list of Recommendations and related specifications within key technologies suitable for C&I testing

<table>
<thead>
<tr>
<th>#</th>
<th>Title</th>
<th>Focal Point</th>
<th>Other SDOs</th>
<th>ITU-T S0s</th>
<th>References to S00s docs</th>
<th>References to ITU-T Recs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M2M Functionality</td>
<td>Ernst Brand (Austria)</td>
<td>-</td>
<td>S11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Functions of broadband network as a part of Wi-Fi</td>
<td>Dmitry Tarasov (Russia)</td>
<td>-</td>
<td>S11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>RIS architectures, signalling protocols, interfaces</td>
<td>Martin Brand (Austria)</td>
<td>-</td>
<td>S11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The list of key Technologies for C&I (2/2)

http://itu.int/go/key-technologies

Network and equipment performance (benchmarking) – Req: Draft Q.39zz-1; TS:Q.3930, Q.3931.1-4, Q.3932.1-4,
QoS/QOE/NP – Req: Q.3925, Y.1541, Y.1542, Y.1543, draft Q.MSPQuality, Q.NP-req;
TS:Q.QMS, Q.3930, Q.3931.1, Q.3931.2
NGN Functionality – Req: Y.2201, Y.2012; TS: Q.3909; TS: Q.3900; Q.3901
Functions of broadband network as a part of NGN – Req: Y.2012; TS: Q.3906.1
IMS architecture, signaling protocols, interfaces – Req: Y.2012; TS: Q.3904
IMS basic call – Protocol conformance testing – Req: Draft Q.39xx-1; TS: Q.3904
IMS supplementary services. Protocol specifications – Req: - ; TS: Q.3943.1/2/4, Q.3942.1
IMS interconnection – Re: Q.3401; TS: -
Interoperability testing – Req: - ; TS: Q.3940, Q.3941.1-4
NGN monitoring system – Req: Q.3902, Q.3910, Q.3911, Q.3912; TS: -
Interworking of signaling protocols of NGN – Req: Q.1912.5, Q.3401, Q.3402; TS: Q.1912.5
RFID – Req: - ; TS: Q.3950

The pilot projects of conformance testing against ITU-T Recommendations (1/2)

http://itu.int/go/pilot-projects

<table>
<thead>
<tr>
<th>Title of planned/on going Pilot Project under C&amp;I Programme</th>
<th>ITU-T Recs.</th>
<th>SGs focal point</th>
<th>Interested companies</th>
<th>Motivations</th>
<th>Short-term strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>The title of planned or on-going Pilot Project which SG is going to start and maintain</td>
<td></td>
<td>The contact of responsible person/expert (rapporteur, editor, etc)</td>
<td>The companies are going or have already involved to the project</td>
<td>The reason and expecting results under ITU C&amp;I Programme</td>
<td>The short-term strategy (one year) for achieving the goals of the Pilot Project</td>
</tr>
</tbody>
</table>
First ITU-T Pilot project

Testing scope: conformance testing of the Multi-technology network interface in accordance with series of Recs. ITU-T M.3170.x

Involved companies: China Telecom, FiberHome, ZTE, CTTL, BUPT, etc.

Goal: improvement of an interconnection between EMS, NMS, and OSS for the MTNM interface

Short-term strategy:

- harmonize requirements based on the inputs provided by vendors, labs, operators
- select an appropriate TL that has a competence to perform the relevant tests
- perform testing at the appointed TL
- populate ITU product conformity DB

Reference Table is a list of ITU-T Recs and applicable test suites (ITU/other SDOs) which indicate relevant parameters to be tested for conformity/interoperability
Testing Laboratories recognition procedure (1/2)

Background: Most SDOs/Forums/Consortia established its own TL’s recognition procedure. This approach helps them to ensure the credibility of their C&I Programmes. TSB developed an overview on a best practice (GSMA, Continua, IECEE).

Goal: the aim of the ITU recognition procedure is to allow TL to be recognized as a laboratory with a competence to perform tests against ITU-T Recommendations.

First draft of the Recognition procedure was proposed by Russia (C97)

Recognition procedure defines:
- Requirements for TL
- Requirements for ITU-T assessors
- Relevant procedure to apply for the ITU recognition

Conformance Assessment Steering Committee (CASC) is an instrument to follow up the recognition procedure

ITU-T SG11 established the CG aiming to clarify this issue

Correspondence group on collaboration between ITU and TLs
- Chairman: Mr Isaac Boateng (vice-chairman of SG11)
- Last meetings: 20 Feb, 10 April, 14 May, 11 June, 2 July and 10 July 2014
- Key outcomes: revised recognition procedure and best practice

Testing Laboratories recognition procedure (2/2)

The recognition procedure of TL

ITA-T TL Database (IT-T TLDB)

ITU-T CASC (assisting by TSB)

Recognition of ITU-T technical experts

Cooperation with external ABS

IECEE, ILAC, etc.

Assessment of TL

Lead Assessors

Technical assessment (ITU-T technical experts)

Assessment team

List of ITU-T technical experts

List of recognized TLs

Application form and interest documents

The application form of TL, recognized recognition

ITU Test Event (1/2)
Performance assessment of mobile phones in conjunction with vehicle’s HFT in accordance with Recs. ITU-T P.1100/P.1110 www.itu.int/go/test-event

Background
Many mobile phones do not work properly with HFT’s system and thereby significantly degrading the speech quality of the complete system

Findings
✓ an incorrect behavior of the mobile phone in the wireless connection to a vehicle’s HFT
✓ an unacceptable quality of a voice-call inside the car and outside the car for the conversational partner

Only 30 % of phones passed the tests

Key outcomes
✓ New web portal describing the existing issues
✓ A “white list” of mobile phones recommended by major car manufactures
✓ Updated Recs. ITU-T P.1100/P.1110 with the new values of performance

Venue: ITU Headquarters
TL: HEAD Acoustics
Date: 12-16 May 2014
Participants: Mercedes-Benz, Volvo, Bosch, Toyota
Number of tests: 40 (30 phones)
ITU press-release

Internet speed quality measurement (1/3)
The key reasons for establishing the global approach:

• Internet services are playing the important role in our life (social networks, OTT, etc.)

• Quality of Internet services becomes a such vexed issue (subscriber loyalty)

• Fixed and Mobile operators are playing the significant role in Internet community

• Customer is looking for the best offer of Internet access “speed/tariff”
The key issues of the existing Internet speed measurement systems:

- The existing algorithms are not suitable for operators/regulators to manage customer’s SLA
- The method is not standardized by International SDO. There is no reliable mechanism for Internet speed checking
- The existing measurement systems do not provide guarantee that testing results related to operator’s network (no guarantee that the measurement connection does not include the Internet segments)

ITU-T SG11 Q15/11 “Testing as a service TAAS” established the new work item Q.Int_speed_test “Unified methodology of Internet speed quality measurement usable by end-users on the fixed and mobile networks”
Who is invited to join the ITU C&I Programme (1/2)

- ITU-T SG11 invites TLs/SDOs/Consortia to launch the pilot projects on the conformity testing against ITU-T Recs. TSB can help to conduct these events
- TSB invites ICT Companies (e.g. vendors, operators, etc.) to launch the interoperability events based on the ITU-T Recs.
- ITU-T SG11 invites companies to develop Test specifications against ITU-T Recs. Other contributions and proposals which are relevant to C&I issues are highly appreciated

Who is invited to join the ITU C&I Programme (2/2)

- ITU-T SG11 invites TLs and all interested parties to participate in CG for discussing the ITU TL’s recognition procedure
- TSB invites Vendors and TL to populate the ITU Product Conformity Database
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ITU/TSB – C&I Programme coordinator
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TSB contacts
Conformance: conformity@itu.int
Interoperability: interop@itu.int
JCA-CIT: tsbjcacit@itu.int

Background slides
ITU web sources related to C&I Programme

ITU C&I resources


Living lists on the ITU-T C&I Portal (1/3) - http://itu.int/go/key-technologies

The living list of Recommendations and related specifications within key technologies suitable for C&I testing

ITU-T SGs outputs:
- Living list of key technologies to be tested on C&I (SG11 output, 25 February - 1 March 2013)
- JCA-CIT updates (25 April 2013)
Living lists on the ITU-T C&I Portal (2/3)

http://www.itu.int/go/pilot-projects

List of Pilot projects for conformity assessment against ITU-T Recs

<table>
<thead>
<tr>
<th>#</th>
<th>Title</th>
<th>ITU-T Recs</th>
<th>Focus/Field</th>
<th>Interested Companies</th>
<th>Methodology</th>
<th>Short-term strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8/20/2014</td>
<td>ITU-T M.3170 series M.3170.1, M.3170.2, M.3170.3</td>
<td>Network Operators</td>
<td>China Telecom Co., Ltd.</td>
<td>Network Equipment Integration and Interoperability</td>
<td>First—gather interested service operators, integrators and other key stakeholders (ITU-T M.3170) to identify and harmonize their testing requirements. Second—select appropriate testing organizations that use common protocols for conformity testing for the Network Equipment Integration and Interoperability (ITU-T M.3170) series. Third—test products which are compliant with the above series of Recommendations in four key areas:</td>
</tr>
</tbody>
</table>