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| **Council 2017 Geneva, 15-25 May 2017** |  |
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| **Agenda item: PL 1.13** | **Document C17/24-E** |
| **14 March 2017** |
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| Report by the Secretary-General | |
| CONFORMANCE AND INTEROPERABILITY PROGRAMME STATUS REPORT AND ACTION PLAN | |

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| Summary  This document summarizes the status of implementation of ITU’s conformance and interoperability programme since Council 2016.  Action required  The Council is invited **to note** the document.  \_\_\_\_\_\_\_\_\_\_\_\_  References  *PP* [*Resolution 177 (Rev. Busan, 2014)*](http://www.itu.int/en/plenipotentiary/2014/Documents/final-acts/pp14-final-acts-en.docx)*;* [*WTSA Resolution 76 (Rev. Hammamet, 2016)*](https://www.itu.int/pub/T-RES-T.76-2016)*; WTDC* [*Resolution 47 (Rev. Dubai, 2014)*](https://www.itu.int/md/dologin_md.asp?lang=en&id=D10-WTDC14-C-0118%21%21MSW-E)*; RA* [*Resolution ITU-R 62-1 (Geneva, 2015)*](https://www.itu.int/pub/R-RES-R.62)*;*  *Council documents:* [*C09/28*](http://www.itu.int/md/S09-CL-C-0028/en)*,* [*C10/35*](http://www.itu.int/md/S10-CL-C-0035/en) *(para 65),* [*C11/38*](http://www.itu.int/md/S11-CL-C-0038/en)*,* [*C12/48*](http://www.itu.int/md/S12-CL-C-0048/en)*,* [*C13/24(Rev.1)*](https://www.itu.int/md/dologin_md.asp?lang=en&id=S13-CL-C-0024!R1!MSW-E)*,* [*C14/24(Rev.1)*](http://www.itu.int/md/S14-CL-C-0024/en)*,* [*C15/24*](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=S15-CL-C-0024) *and* [*C16/24(Rev.1)*](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=S16-CL-C-0024)  *Websites:* [*ITU Conformance and interoperability Portal*](http://www.itu.int/net/ITU-T/cdb/Default.aspx) *and*  [*Conformance and Interoperability for Developing Countries;*](http://www.itu.int/en/ITU-D/Technology/Pages/ConformanceandInteroperability.aspx) |

# 1 Introduction

1.1 The ITU conformance and interoperability (C&I) programme mandated by Resolution 177 (Rev. Busan, 2014) is based on four pillars: Pillar 1: Conformity assessment (CA); Pillar 2: Interoperability events; Pillar 3: Human resource capacity building; and Pillar 4: Assistance in the establishment of test centres and C&I programmes in developing countries.

1.2 Actions of Pillars 1 and 2 are led by the Telecommunication Standardization Bureau (TSB), actions of Pillar 3 and 4 by the Telecommunication Development Bureau (BDT). ITU-R continues to collaborate with, and provide information when requested by, ITU-T and ITU-D on C&I testing, as mentioned in the *‘resolves’* part of Resolution ITU-R 62.

# 2 Past and future activities on the implementation of the ITU C&I Action Plan

Since Council 2013 approved an updated C&I Action Plan, as contained in section 4 of [C13/24(Rev.1)](https://www.itu.int/md/dologin_md.asp?lang=en&id=S13-CL-C-0024!R1!MSW-E), the ITU C&I Programme is progressing well. Below is a summary of activities since Council-16 with the labeling of the sections (*a, b, c* ...) corresponding to the labeling of action items specified.

***2.1 Pillar 1 – Conformity Assessment***

*b)* The ITU [Product Conformity Database](http://www.itu.int/net/itu-t/cdb/ConformityDB.aspx), endorsed by PP Resolution 177 to provide industry with a means to publicize the conformance of ICT products and services with ITU-T’s international standards was launched on 18 December 2014 with entries of e-health devices compliant with Recommendation ITU-T H.810 *“Interoperability design guidelines for personal health systems”*. These entries have been periodically updated in collaboration with Continua Health Alliance. Currently, the database contains more than 500 entries which include E-health devices, mobile phones and Ethernet services.

ITU-T SGs maintains the [pilot projects](http://www.itu.int/go/pilot-projects) on C&I testing.

*c)* In February 2017, ITU-T SG11 updated the [Reference table](http://www.itu.int/en/ITU-T/C-I/Pages/CI-reference.aspx) of ITU-T Recommendations suitable for C&I testing.

ITU-T SG11 is [collaborating with ETSI TC INT](https://www.itu.int/md/T13-SG11-151202-TD-GEN-0913/en) to develop standards for SIP-IMS conformity testing, Internet related performance measurements, framework of an interconnection among VoLTE/ViLTE-based networks, requirements and relevant test specifications.

In July 2016, ITU-T SG11 approved a new Recommendation ITU-T Q.3960 *“Framework of Internet related performance measurements”,* the first of a series of ITU-T Recommendations on Internet measurements. This Recommendation describes the framework for Internet related performance measurements which can be established at the national or international level, providing customers of the existing public telecommunication operator's networks the possibility to measure a customer's connection to the Internet. Following this outcome, ITU-T SG11, in collaboration with ETSI TC INT, continues to develop draft Recommendation ITU-T Q.3961 *“Testing methodologies of Internet related performance measurements including e2e bit rate within the fixed and mobile operator's networks”* and encourages all interested parties and SDOs to join this activity. More information is available on the ITU-T SG11 [webpage](https://www.itu.int/en/ITU-T/C-I/Pages/IM/Internet-speed.aspx).

ITU-T SG11 progresses on the work item [Q.30xx\_VoLTE\_Interconnection](http://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=10782) "Framework of interconnection of VoLTE/ViLTE-based networks" which started following the discussion at the ITU [Workshop](http://www.itu.int/en/ITU-T/Workshops-and-Seminars/conformity-interoperability/20150112/Pages/default.aspx) on 1 December 2015. In February 2017, ITU-T SG11 started a new work item Q.VoLTE\_INT\_TEST *“VoLTE/ViLTE interconnection testing for interworking and roaming scenarios including relevant QoS/QoE testing”*.

*d)* In February 2017, ITU-T SG11 approved a new guideline *“ITU-T CASC procedure to appoint ITU-T technical experts”*. (CASC: Conformity Assessment Steering Committee)

In 2016, ITU-T CASC established a [List](https://www.itu.int/md/T13-SG11-160627-TD-GEN-1306/en) of ITU-T Recommendations which may become subject of joint certification schemes according to the inputs received from ITU-T SGs and ITU members. Among them are: ITU-T P.1140, ITU-T P.1100, ITU-T P.1110 and ITU-T K.116.

ITU-T CASC continues collaborating with existing Conformity Assessment Systems and Schemes such as IEC and ILAC. Therefore, the Certification Management Committee (CMC) of IEC set up a [Task Force “ITU requirements”](http://www.iecee.org/dyn/www/f?p=106:46:11161765169405::::FSP_ORG_ID:19407).

In addition, ITU-T CASC received responses from IECEE on its inquiry asking IECEE members on ITU Recommendations to be used for certification, [TD 50 (GEN/11)](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T17-SG11-170206-TD-GEN-0050). Among IECEE members which provided feedback are: Italy, Slovenia, Switzerland, and Viet Nam.

Currently, ITU-T CASC, in collaboration with IEC TF, is working on two guidelines:

* Guidelines-CP-AB *“Guideline on ITU-T CASC collaboration procedure with established accreditation bodies to assess TLs in the scope of approved ITU-T Recommendations”*;
* Guideline-RP-TL *“Guideline on ITU-T CASC procedure to recognize Testing Laboratories”*.

ITU-T CASC was established by SG11 in 2015 to elaborate the recognition procedure of Testing Laboratories (TLs) which have competence for testing against ITU-T Recommendations according to the Guideline *“Testing Laboratories Recognition Procedure”* approved by SG11 in 2015. The next CASC meeting is scheduled on 12 July 2017 (e-meeting). The Terms of References of ITU-T CASC are available on the CASC’s [webpage](https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/CASC.aspx).

*e)* In June 2016, SG11 conducted a [Workshop](https://www.itu.int/en/ITU-T/Workshops-and-Seminars/20160628/Pages/default.aspx) on *“Combating Counterfeit Using Conformance and Interoperability Solutions”.*

In February 2017,ITU-TSG11 approved a survey report on counterfeit ICT devices in Africa region, [TD 1199 Rev.1 (GEN/11)](https://www.itu.int/md/T13-SG11-160627-TD-GEN-1199/en) and started a new work item ITU-T Q.FW\_CSM *"Framework for combating the use of Stolen Mobile ICT Devices"*. In addition, two technical reports have been revised: Q.FW\_CCF *“Framework for solution to combat counterfeit ICT Devices”* and TR-CF\_BP *“Technical Report - Guidelines on Best Practice and Solutions for Combating Counterfeit ICT”.*

*f)* In February 2017, SG11 consented new draft Recommendation ITU-T Q.3713 *“Signalling requirements for BNG (Broadband Network Gateway) pool”* which strengthens the conformance requirements identifying which elements of the Recommendation are required for conformance.

In January 2017, ITU-T SG12 revised Recommendation ITU-T P.1100/P.1110 based on the testing results of the [third ITU-T test event](https://www.itu.int/en/ITU-T/C-I/Pages/HFT-mobile-tests/test_event_3.aspx) on performance assessment of mobile phones in conjunction with hands-free telephone systems in a car. The revised P.1100 and P.1110 identify requirements which need to be tested to claim compliance with particular sections of these Recommendations.

*g)* ITU-T SGs responsible for implementing testing pilot projects (clause *b*) are developing relevant test specifications, including PICS, PIXIT, ATS (e.g. Q.3905, M.3170 series).

ITU-T SG11 finalized the first set of Recommendations which specify requirements and relevant test specifications for basic call and supplementary services for SIP-IMS-based networks. The second set of standards will follow. More details are available on [SIP-IMS webpage](https://www.itu.int/en/ITU-T/C-I/Pages/SIP/IMS.aspx).

In January 2017, ITU-T SG16 approved the new C&I testing document on accessibility profiles for IPTV systems (ITU-T HSTP.CONF-H702) and consented 39 new and revised Recommendations for conformance testing specifications for ITU-T H.810 personal health devices (ITU-T H.820-H.850 series).

ITU-T SG5 is working on new Recommendations related to electromagnetic disturbance, resistibility tests and test specifications related to the universal charge adapter (Rec. ITU-T L.1005). In 2016, ITU-T SG5 approved the Recommendation ITU-T K.44 which describes resistibility tests for telecommunication equipment exposed to overvoltages and overcurrents.

In January 2017, ITU-T SG12 consented revised ITU-T P.381 which describes technical requirements and test methods for the universal wired headset and consented ITU-T P.1120 which contains testing purposes and the test set-up for Super-WideBand (SWB) and FullBand (FB) hands-free communication in motor vehicles.

***2.2 Pillar 2 – ITU Interops***

***2.2.1 Test events on IPTV***

In 2016, ITU organized a series of [ITU test events on IPTV](http://www.itu.int/en/ITU-T/C-I/interop/Pages/IPTV201701.aspx) to improve the ITU-T standards and test specifications on IPTV. Based on these testing experiences, IPTV manufacturers showed interest in conducting conformance testing of their products to submit entries to populate the ITU Product Conformity Database, after successfully passing the relevant tests. To meet market demand, ITU-T SG16 established an ITU IPTV testing team and started a new pilot project of conformity assessment against the Recommendation ITU-T H.700 series.

In January 2017, during the SG16 meeting, the established IPTV testing team and Keio University conducted conformance testing on [ITU-T H.721](http://www.itu.int/itu-t/recommendations/rec.aspx?rec=12458) using relevant test specifications [HSTP-CONF H721](http://www.itu.int/pub/T-TUT-IPTV-2015-H721). The next IPTV test event is planned to be held during the next Q13/16 Rapporteur meeting in Geneva in May 2017.

***2.2.2 Test events on compatibility of mobile phones and vehicle hands-free terminals***

Following the three ITU test events to assess the performance of mobile phones’ narrowband and/or wideband communications with vehicle-mounted hands-free terminals which was held in [May 2014](https://www.itu.int/en/ITU-T/C-I/Pages/test_event_Feb14.aspx), [May 2016](https://www.itu.int/en/ITU-T/C-I/Pages/HFT-mobile-tests/test_event_2.aspx) and [November 2016](https://www.itu.int/en/ITU-T/C-I/Pages/HFT-mobile-tests/test_event_3.aspx), ITU is organizing a roundtable on 10 March 2017 ([webpage](https://www.itu.int/en/ITU-T/C-I/Pages/HFT-mobile-tests/roundtable_march17.aspx)) to discuss possible approaches to address such issues, including the feasibility of establishing a special logo which may appear on a hands-free terminal display in a car when a ‘whitelisted’ phone connects to it.

The best hands-free performers are highlighted in the “[whitelist](https://www.itu.int/en/ITU-T/C-I/Pages/HFT-mobile-tests/HFT_testing.aspx)”.

***2.3 Pillar 3 – Capacity building***

a) ITU is implementing human resources [capacity building](http://www.itu.int/en/ITU-D/Technology/Pages/Events.aspx) in the regions on C&I. The training sessions are organized in collaboration with relevant regional and international organizations to clarify fundamental aspects such as accreditation, certification, and mutual recognition agreements, as well as to explore the possibility for collaboration and sharing of C&I infrastructure (type approval processes, test reports, etc.).

In 2016, C&I training courses were organized: 1) ARB region (Tunis, Tunisia, April 2016); 2) AMS region (Campinas, Brazil, June 2016); 3) AFR region (Tunis, Tunisia, May 2016); 4) CIS region (Moscow, Russia, March 2016); and 5) ASP region (Chongqing, China, October 2016). A bespoke training event on conformance testing has been organized for Ghana (Turin, Italy, October 2016). These events covered: test equipment, calibration, and test setup; new approaches and directives; market surveillance and best practices to assess the market; 3G and 4G mobile networks and EMC fundamentals; international standards for the type approval of ICT equipment; practical measurements in laboratory; and country reports with the C&I programmes in place have been shared by participants.

The C&I training events scheduled for 2017 consider new aspects and affordable approaches for achieving C&I, such as innovative procedures to improve C&I programmes and Virtual Laboratory services.

In accordance with PP Resolution 177 (Rev. Busan, 2014), the ITU secretariat is developing a C&I Training Programme (CITP) based on the [ITU Academy](https://academy.itu.int/index.php?lang=en) environment as well as existing C&I trainings and guidelines. The CITP is following the framework of previous successful ITU training programmes, such as regional training sessions on C&I Programmes and test domains. The training materials are based on ITU Publications on C&I, such as Guidelines and Recommendations and training materials of previous workshops. Finally, the CITP follows ITU Academy quality assurance mechanisms.

***2.4 Pillar 4 – Assistance in the establishment of test centres and C&I programmes in developing countries***

*a)* In order to address specific national or regional programmes for implementation and reviewing type approval procedures of ICT products, ITU has been providing assistance to developing countries.

In 2016, [C&I assessment studies](http://www.itu.int/en/ITU-D/Technology/Pages/CI_AssessmentStudyRegional.aspx) to promote the establishment of a common C&I programme through the development of Mutual Recognition Agreements (MRAs) and/or building laboratories were followed-up for the Maghreb Region (five countries) and for COMTELCA (seven countries). The findings and recommendations coming from the ITU C&I Assessment Studies are available for download.

Similar assessment studies covering regulation, institutions, laboratories, and type approval procedures of ICT products will be conducted for the Economic Community of Central African States (ECCAS) and the South American regions in 2017.

As a result of C&I activities in Central America, an innovative Pilot Project on Virtual Laboratory services study and the correspondent Test Pilot has been presented during the 2nd C&I [Workshop](http://www.itu.int/en/ITU-D/Regional-Presence/Americas/Pages/EVENTS/2016/15556.aspx) for COMTELCA Member Countries, 5-6 December 2016, in San Salvador, El Salvador.

[ITU-UMA Experts Meeting on C&](http://www.itu.int/en/ITU-D/Regional-Presence/ArabStates/Pages/CI-2016.aspx)I in the Maghreb Countries, Rabat, Morocco, 14-15 December 2016, discussed on a draft document to be presented at the meeting of the Council of the Ministers of Communications in Maghreb. It contains a proposal for a [UMA-MRA](http://www.itu.int/en/ITU-D/Regional-Presence/ArabStates/Documents/events/2016/CI/UMA%20Meeting/UMA%20MRA_E.pdf) for Conformity Assessment of Telecommunication Equipment. (UMA: Arab Maghreb Union)

*b)* A [complete set of guidelines on C&I](http://www.itu.int/en/ITU-D/Technology/Pages/PublicationsandDeliverables.aspx) covering relevant topics, such as: C&I Programmes; establishment of Mutual Recognition Agreements; and Testing Laboratory services are made available for ITU membership.

*c)* The establishment of MRAs aiming at promoting regional integration and common C&I programmes, was discussed at regional and subregional levels in all events mentioned above. The basic document for discussion is the “[Guidelines for the development, implementation and management of mutual recognition arrangements/agreements (MRAs) on conformity assessment](http://www.itu.int/en/ITU-D/Technology/Documents/ConformanceInteroperability/GuidelinesMRAs_E.pdf)”.

The ITU-D SG2 [Question 4](http://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2014&rgq=D14-SG02-RGQ04.2&stg=2) “Assistance to developing countries for implementing conformance and interoperability programmes”, established by WTDC-14, held its last meeting in April 2017. The final report is available [here](https://www.itu.int/md/D14-SG02-C-0416/en).

***2.5 Pillars 1-4***

*a)* ITU signed MoUs for the implementations of the C&I programme.

*b)* The ITU secretariat shared the progress of ITU’s C&I Programme and discussed possible collaboration with relevant international bodies in the field of conformity assessment such as IEC, ISO, ISO/CASCO, ILAC, IAF, and DCMAS.

*c)* The [ITU C&I Portal](http://www.itu.int/net/ITU-T/C-I/) website is continuously updated.

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