
Question(s): All/11

Geneva, 25 February-1 March 2013

TD**Source:** WP4/11 Chairman**Title:** ITU-T SG11 Action plan for ITU C&I Programme implementation

1. Summary

ITU created the Conformity and Interoperability (C&I) Programme as a tool contributing to reply to the request of membership to ensure interoperability of ICTs products implemented according to ITU recommendations or part thereof.

The program is also aimed at improving the quality of the ITU-T Recommendations, reducing digital divide and standardization gap and at offering to developing countries tools and knowledge about testing activities and to set up test centres in the regions.

The Programme is implemented in accordance with [Resolution 177](#) (Guadalajara, 2010) of the Plenipotentiary Conference. A three ITU Sectors now have a Resolution on C&I: revised [Resolution 76](#) (Dubai, 2012) of the World Telecommunication Standardization Assembly (reproduced in [Annex G](#)), [Resolution 47](#) (Rev. Hyderabad, 2010) of the World Telecommunication Development Conference, and [Resolution 62](#) (Geneva 2012) of the Radiocommunication Assembly.

The Action plan approved by the Council-12 ([C12/48](#) and [C12/91](#) of Council-12) (reproduced in [AnnexF](#))**Error! Reference source not found.**, is based on four pillars and specifies the following actions:

Pillar 1. Conformity Assessment

- to provide the guidance to maintain/drop the Route 4
- to find out the pilot projects for conformity assessment against ITU-T Recommendations
- to identify further technologies to be tested on conformity
- to identify the parameters of ITU-T Recommendations needed to be tested for conformity

Pillar 2. Interoperability

- to identify further technologies to be tested on interoperability
- to identify the parameters of ITU-T Recommendations needed to be tested for interoperability
- identifying the topics of Interoperability events

Pillar 3. Capacity building

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Pillar 4. Assistance for the establishment of test centres in the regions

The scope of this SG11 Action plan is to assist ITU-T SGs in their work concerning the ITU C&I Programme and is addressed to help developing countries to implement the conformity/interoperability assessment in the Region taking into account international approaches, best practices and requirements.

In accordance with WTSA-12 decisions ([Resolution 76](#)) (reproduced in [Annex G](#)) and Council-12 decisions ([C12/48 of Council-12](#)) (reproduced in [Annex F](#)) pillars 1&2 are led by the Telecommunication Standardization Bureau (TSB) and Pillars 3&4 by the Telecommunication Development Bureau (BDT) in close cooperation.

The SG11 Action plan describes actions to be undertaken by ITU-T SGs for the implementation of the pillar 1 and 2 of ITU C&I programme according to the decisions of Council-12 and WTSA-12 and the relevant action plan ([C12/48 of Council-12](#)) (reproduced in [Annex F](#)).

2. SG11 actions

2.1 Pillar 1 Conformity assessment

2.1.1 “ITU-T to decide whether to follow KPMG’s recommendation to drop route 4 (vendor self-declaration, i.e., not 3rd party testing) to populate the ITU conformity database” ([C12/48 of Council-12](#)) (reproduced in [Annex F](#)).

SG11 action: SG11 to decide whether to keep or to drop route 4.

2.1.2 “ITU-T to run a pilot of the conformity assessment programme for key technologies for which there is a market demand for such a programme. A test lab or certification body would execute tests. Given a vendor’s agreement, an entry would then be made in the ITU T conformity database” ([C12/48 of Council-12](#)) (reproduced in [Annex F](#)).

SG11 actions:

- **to collect input from other ITU-T SGs about technologies to be tested for conformity and/or interoperability** and relevant existing test suites (from ITU or other SDOs forums) included in CIT clauses of the ITU Recs **to prepare a Living list** ([Annex A](#));
- **to collect the proposals from other ITU-T SGs concerning the status on possible pilot projects of conformity assessment against ITU Recs** ([Annex C](#)).

JCA-CIT will collect the inputs from all SGs and helps SG11 in its coordination activities with other ITU-T SGs to identify those technologies suitable for conformity and interoperability testing.

2.1.3 “ITU-T study groups to identify further technologies for which there is a market demand for a conformity assessment programme and to identify whether test specifications are available and if not, to explore the provision of test specifications. If test specifications are available, they may be turned into e.g. ITU-T Recommendations or supplements” ([C12/48 of Council-12](#)) (reproduced in [Annex F](#)); and [Resolution 76](#) of WTSA-12 (reproduced in [Annex G](#)) resolves “that conformance and interoperability testing requirements shall provide for verification of the parameters defined in the current and future ITU-T Recommendations as determined by the Study Groups developing the Recommendations, and for interoperability testing to ensure interoperability taking into account user needs and in consideration of the market demand, as appropriate”.

Following the principles and results of the last study period the [list of ITU-T Recommendations specifying the test procedures](#) (already published on the [C&I Portal](#)) can be updated and be added by additional parameters needed to be tested for conformity assessment with references to the applicable test suites (ITU/other SDOs).

SG11 actions: SG11 requests other SGs to update the table in area of their responsibilities showing list of Recs and relevant parameters to be tested for conformity and references to the applicable test suites (ITU/other SDOs. T) ([Annex B](#)) based on information provided by the SGs especially for key Recommendations. JCA-CIT is responsible for collecting proposals for the reference table from other SGs and the final reference table, concerning all ITU-T Recommendations, is forwarded to TSB C&I Task Force from JCA-CIT as available.

2.1.4 “TSB to gather information from members, vendors, labs, SDOs, Forums and Consortia about labs and to invite them to join the ITU C&I Programme” ([C12/48 of Council-12](#)) (reproduced in [Annex F](#)).

SG11 actions: SG11 to prepare a draft of questionnaire about information of activities of C&I players. TSB will invite the labs able to carry out conformance assessment testing against ITU-T Recommendation to join the ITU C&I Programme. ISO/IEC 17025 accreditation, if any, will be an additional useful information..

2.1.5 “TSB to produce a report on measures against counterfeiting (not a KPMG recommendation but Resolution 177 instructs the TSB Director “to assist Member States in addressing their concerns with respect to counterfeit equipment”)” ([C12/48 of Council-12](#)) (reproduced in [Annex F](#)).

SG11 actions: SG11 and other ITU-T SGs are invited to contribute to this activity. JCA-CIT organizes works and discussions concerning this topic and JCA-CIT is the focal point on this issue.

2.2 Pillar 2 Interoperability

2.2.1 “TSB to consult study groups towards identifying and suggesting topics for future events, based on continuous surveillance of market and technological developments and on probing of members’ needs, and organize those events. In addition to organizing further ITU interops on IPTV and G.hn, discussions are taking place to organize interops on multimedia conferencing (IMTC’s (International Multimedia Teleconferencing Consortium) “Superop” event which tests among others the ITU-T SG 16 H-series); QoS aspects (ITU-T SG 12); e-health (with Continua Health Alliance; ITU-T SG 16)” ([C12/48 of Council-12](#)) (reproduced in [Annex F](#)).

SG11 actions:

- to identify, define and JCA-CIT to collect from other ITU-T SGs the system roadmaps on interoperability of their Recommendations/Technologies under study and where interoperability is needed;
- to prepare a reference table showing list of Recs and relevant parameters to be tested for interoperability and references to the applicable test suites (ITU/other SDOs) ([Annex B](#)) based on information provided by the SGs, but at least for each of the ITU key Recommendations. This list will be part of a Conformity and Interoperability Testing (CIT) Clause (informative or non-informative as decided by each SG).
- SGs to gather information about technologies where there is considerable market demand (including new technologies) and ready for interoperability with the requests to the other ITU-T SGs. JCA-CIT develops the final Living list of technologies have to be tested on the interoperability ([Annex A](#)), gathering the proposals from ITU members/participants willing to organize/participate “Interop events” ([Annex D](#)) based on information received;
- ITU-T SGs members are invited to find the possibility to cooperate to study, encourage and implement common conformance and interoperability testing initiatives.

2.3 Coordination with the other ITU-T SGs

SG11 will cooperate with other SGs by the liaison statements which will be exchanged to/from all study groups for each of the activities mentioned in this SG11 action plan.

2.4 CIT clauses development

2.4.1 According to [Resolution 76](#) of WTSA-12 (reproduced in [Annex G](#)), SGs has been instructed “to identify as soon as possible existing and future ITU-T Recommendations that would be candidates for conformance and interoperability testing, taking into account the needs of the membership”.

SG11 action: in accordance with [JCA-CIT Doc.47](#) the relevant CIT clauses (parameters to be tested and Test Suite) could be included in ITU-T Recommendations to conducting conformance and interoperability tests as appropriate. SG11 recommends to other SGs to prepare Requirements/Test Suites for conformity and interoperability by one of the following ways:

- on the TTCN-3 basis, as the methodology which was described in [JCA-CIT Doc.47](#) “Text on CIT needs for inclusion in Recommendations”;
- by methodologies and frameworks decided by the ITU-T SGs.

Note:

- a) The clause on CIT about Parameters and Test Suites on conformity/interoperability may include:
 - title of test and possibly an identification code;
 - reference to ITU-T Recommendation and relevant parameter(s)/Clause;
 - reference to the publication where the test suite is described;
 - expected results (the parameter’s value/s if not described in the body of the Recommendation);
- b) SGs will decide if test suites will be described in detail in the CIT Clause including at least:
 - test set-up / framework
 - the procedure of testing (testing flows);
 - the template/format of achieved results (the testing report).

Annex A. Living list of technologies suitable for conformity and/or interoperability testing

#	Title of technologies have to be tested on C&I	SG's Focal point	Other SDOs involved to this activity	References to SDOs docs	References to ITU-T Recs.
1.	Specify the technologies have to be tested on C&I	Indicate the contact of responsible persons/experts (rapporteur, editor, etc)	Identify other SDOs interested and have already been working on these activities	Identify the SDO's documents describing the requirements (parameters have to be tested)	Specify the ITU-T Recommendations describing the requirements to technology
Identify the SDO's Test Suites				Specify the ITU-T Recommendations describing the Test suites	

Annex B. ITU Recommendations to be tested for conformity/interoperability

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity	Resistibility (subset of Interop)					
Add new Recs or delete Recs for which testing are requested	Indicate [Y/N] if testing is demanded for conformity	Indicate [Y/N] if testing is demanded for interop	List parameters to be tested	Indicate [Y/N] if test suites are available in ITU-T Recommendations or other ITU-T publications	Indicate [Y/N] availability of test suites in bodies other than ITU (even not ITU-T A.5)	Indicate the references (possibly including hyperlinks) to point to the texts describing test suites	If test suites are missing specify here who will develop them (SGs or external bodies)

Study Group 5

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity	Resistibility (subset of Interop)					
K.20		Y		Y	N		
K.21		Y		Y	N		
K.45		Y		Y	N		
K.44		Called up by K.20, K.21 and K.45					

Revised texts of K.20, K.21, K.44 and K.45 are programmed for 2011. However the texts maybe updated sooner if necessary.

Study Group 9

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity	Interoperability					
Digital transmission of television signals (J.80, J.180, J.280, J.380 series)							
J.83	Y	Y		Y	Y ¹⁾		
Interactive systems for digital TV distribution (J.110, J.210, J.220 series)							
J.112	Y	Y		Y	Y ¹⁾		
J.122	Y	Y		Y	Y ¹⁾		
J.125	Y	Y		Y	Y ¹⁾		
J.126	Y	Y		Y	Y ¹⁾		
J.128	Y	Y		Y	Y ¹⁾		
J.210	Y	Y		N	Y ¹⁾		
J.211	Y	Y		N	Y ¹⁾		
J.212	Y	Y		N	Y ¹⁾		
J.222.1	Y	Y		N	Y ¹⁾		
J.222.2	Y	Y		Y	Y ¹⁾		
J.222.3	Y	Y		Y	Y ¹⁾		
J.213	Y ²⁾	Y ²⁾		N	Y ²⁾		
J.214	Y ²⁾	Y ²⁾		Y	Y ²⁾		

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity	Interoperability					
J.218	Y ²⁾	Y ²⁾		N	Y ²⁾		
Television and sound program transmission over IP networks (J.120 series)							
J.127	Y	N		N	Y (ISO/IEC MPEG)		No [specify]
Transport of MPEG-2 signals on packetized Networks (J.130 series)							
Measurement of the quality of service (J.140. J.240 series)							
J.144	Y	N		Y ³⁾	Y		
J.242	Y	N		N	N		
J.244	Y	N		N	N		
J.246	Y	N		N	N		
J.247	Y	N		N	N		
Digital TV distribution through local subscriber networks (J.150 series)							
IP Cablecom (J.160, J.170, J.260, J.270 series)							
J.161	Y	Y		Y	Y ¹⁾		
J.162	Y	Y		Y	Y ¹⁾		
J.163	Y	Y		N	Y ¹⁾		
J.164	Y	Y		Y	Y ¹⁾		

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity	Interoperability					
J.166	Y	Y		N	Y ¹⁾		
J.167	Y	Y		N	Y ¹⁾		
J.170	Y	Y		Y	Y ¹⁾		
J.171.0	Y	Y		N	Y ¹⁾		
J.172	Y	Y		Y	Y ¹⁾		
J.179	Y	Y		Y	Y ¹⁾		
J.262	Y	Y		N	N		
J.263	Y	Y		N	N		
Set-Top Box and Home Networking (J.190, J.290 series)							
J.191	Y	Y		Y	Y ¹⁾		
J.192	Y	Y		Y	Y ¹⁾		
J.199	Y	Y		N	Y ¹⁾		
J.293	Y ²⁾	Y ²⁾		Y	Y ²⁾		
J.204	Y	Y		N	Y ¹⁾		
J.215	Y	Y		N	Y ¹⁾		
Middleware and API (J.200 series)							
J.202	Y	Y		Y	Y ¹⁾ for OCAP		

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity	Interoperability					
IPCablecom2 (J.360, J.370, J.460 series)							
J.361	Y	Y		Y	Y ¹⁾		
J.365	Y	Y		Y	Y ¹⁾		
J.366.0	Y	Y		Y	Y ¹⁾		
J.366.2	Y	Y		Y	Y ¹⁾		
J.366.3	Y	Y		Y	Y ¹⁾		
J.366.4	Y	Y		Y	Y ¹⁾		
J.366.7	Y	Y		Y	Y ¹⁾		
J.366.8	Y	Y		Y	Y ¹⁾		
J.366.9	Y	Y		Y	Y ¹⁾		
J.368	Y	Y		Y	Y ¹⁾		
J.369	Y	Y		Y	Y ¹⁾		
J.370	Y	Y		Y	Y ¹⁾		
Transport of large Screen Digital Imagery (J.600 series)							
J.602	Y	Y		Y			
Secondary distribution of IPTV services (J.700 series)							
J.702	Y ²⁾	Y ²⁾		Y	Y ²⁾		
Multimedia over IP in cable (J.800 series)							

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity	Interoperability					
Transmission of 3-D TV services (J.900 series)							

Y¹): Having been tested and certified by CableLabs (USA)

Y²): Not currently part of the certification/quality testing but could be the future

Y³): J.144 already includes output values expected to be produced by models for a large set of test sequences. Although the sequences themselves are not available it is possible that some small subset of these sequences could be made available. This would then provide a set of test vectors with model output values against which conformance could be tested.

Study Group 11

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity	Interoperability					
Q.3900	Y	Y		Y	Y		N [specify]
Q.3901	Y	Y		Y	Y		N [specify]
Q.3903	Y	Y		Y	Y		N [specify]
Q.1912.5B	Y	Y		Y	Y		N [specify]
Q.1912.5C	Y	Y		Y	Y		N [specify]
Q.1912.5D	Y	Y		Y	Y		N [specify]
Q.1912.5E	Y	Y		Y	Y		N [specify]
Q.3904	Y	Y		Y	Y		N [specify]
Q. SIP-ISDN-IT B	N	Y		Y	Y		N [specify]
Q. SIP-ISDN-IT C	N	Y		Y	Y		N [specify]
Q. SIP-	N	Y		Y	Y		N [specify]

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity	Interoperability					
ISDN-IT D							
Q. Conf-TIR-TIR B	Y	Y		Y	Y		N [specify]
Q. Conf-TIR-TIR C	Y	Y		Y	Y		N [specify]
Q. Conf-TIR-TIR D	Y	Y		Y	Y		N [specify]
Q. Conf-OIR-OIR B	Y	Y		Y	Y		N [specify]
Q. Conf-OIR-OIR C	Y	Y		Y	Y		N [specify]
Q. Conf-OIR-OIR D	Y	Y		Y	Y		N [specify]
Q. Conf-Hold B	Y	Y		Y	Y		N [specify]
Q. Conf-	Y	Y		Y	Y		N [specify]

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity	Interoperability					
Hold C							
Q. Bench-IMS-NGN A	N	Y		Y	Y		N [specify]
Q. Bench-IMS-NGN B	N	Y		Y	Y		N [specify]
Q. Bench-PES-NGN A	N	Y		Y	Y		N [specify]
Q. Bench-PES-NGN B	N	Y		Y	Y		N [specify]
Q.3905	Y	Y		Y	Y		N [specify]
Q.3906.1	Y	Y		Y	Y		N [specify]
Q.3906.2	Y	Y		Y	Y		N [specify]
Q.3906.	Y	Y		Y	Y		N [specify]

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity	Interoperability					
3							
Q.3907	Y	Y		Y	Y		N [specify]
Q.3908	Y	Y		Y	Y		N [specify]
Q.3915	Y	Y		Y	Y		N [specify]
Q.3916	Y	Y		Y	Y		N [specify]
Q.3917	Y	Y		Y	Y		N [specify]
Q.3918	Y	Y		Y	Y		N [specify]
Q. Bench-IMS-NGN C	N	Y		Y	Y		N [specify]
Q. Perf-Bench IMS D	N	Y		Y	Y		N [specify]
Q. Bench-PES-NGN C	N	Y		Y	Y		N [specify]
Q. Perf-obj test VS IP	N	Y		Y	Y		N [specify]
Q.3919	N	Y		Y	Y		N [specify]

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity	Interoperability					
Q.3920	N	Y		Y	Y		N [specify]
Q.3921	N	Y		Y	Y		N [specify]
Q.3922	N	Y		Y	Y		N [specify]
Q.3923	N	Y		Y	Y		N [specify]
Q.3924	N	Y		Y	Y		N [specify]
H.IRP	Y	Y		N	N		Y [specify]
X.oid-res	Y	Y		N	N		Y [specify]

Study Group 12

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity	Interoperability					

Study Group 13

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity	Interoperability					
Y.phys-arch-ngn	Y	=	=		=		Y [specify]

Study Group 15

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
G.999.1	N	N		N	N		N [specify]
G.hntreq	N	N		N	N		N [specify]
G.986 (ex G.gbe)	N	N		N	N		N [specify]
G.xgpon. def (tentative G.987)	Y	Y		N	N		Y [specify]
G.xgpon. 1 (tentative G.987.1)	Y	Y		N	N		Y [specify]
G.xgpon. 2 (tentative G987.2)	Y	Y		N	N		Y [specify]

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
G.Xgpon.3 (tentative G.987.3)	Y	Y		N	N		Y [specify]
G.xgpon.4 (tentative G.987.4)	Y	Y		N	N		Y [specify]
G.780/Y.1351	N	N		N	N		N [specify]
G.870/Y.1352	N	N		N	N		N [specify]
G.8001/Y.1354	N	N		N	N		N [specify]
G.8081/Y.1353	N	N		N	N		N [specify]
G.8101/Y.1355	N	N		N	N		N [specify]
G.993.2	Y	Y		N	N		Y [specify]
G.995.1	N	N		N	N		N [specify]
G.996.1	Y	Y		N	N		Y [specify]

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
G.9960 (ex G.hn)	Y	Y		N	N		Y [specify]
G.inp	Y	Y		N	N		Y [specify]
G.nm	Y	Y		N	N		Y [specify]
G.vector	Y	Y		N	N		Y [specify]
G.650.1	Y	N		Y	Y		N [specify]
G.650.2	Y	N		Y	Y		N [specify]
G.650.3	Y	N		Y	Y		N [specify]
G.651.1	Y	N		Y	Y		N [specify]
G.652	Y	N		Y	Y		N [specify]
G.653	Y	N		Y	Y		N [specify]
G.654	Y	N		Y	Y		N [specify]
G.655	Y	N		Y	Y		N [specify]
G.656	Y	N		Y	Y		N [specify]
G.657	Y	N		Y	Y		N [specify]
G Suppl. 40	N	N		N	N		N [specify]
G.640	Y	Y		N	Y		N [specify]
G.664	Y	N		Y	Y		N [specify]

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
G.680	Y	Y		N	N		N [specify]
G.691	Y	Y			Y		N [specify]
G.692	Y	Y			Y		N [specify]
G.693	Y	Y					
G.694.1	Y	Y		N			
G.694.2	Y	Y		N			
G.695	Y	Y		N			
G.696.1	Y	Y		N			
G.697	Y	Y		N			
G.698.1	Y	Y		N			
G.698.2	Y	Y		N			
G.957	Y	Y		N			
G.959.1	Y	Y		N			
G.661	Y	Y		Y			
G.662	Y	Y			Y		
G.663	Y	Y			Y		
G.665	Y	Y			Y		
G.666	Y	Y			Y		

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
G.667	Y	Y			Y		
L.12	Y	Y			Y		
L.13	Y	Y			Y		
L.18	Y	Y			Y		
L.31	Y	Y			Y		
L.36							
L.37	Y	Y			Y		
L.50	Y	Y			Y		
L.51	Y	Y			Y		
L.70	Y	Y			Y		
L.Distr							
L.Drop	Y	Y			Y		
L.modc	Y	Y			Y		
L.Oxcon	Y	Y			Y		
G.971	Y	Y		Y			
G.972	Y	Y		Y			
G.973	Y	Y		Y			
G.974	Y	Y		Y			

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
G.975.1	Y	Y		Y			
G.976	Y	Y		Y			
G.977	Y	Y		Y			
G.978	Y	Y		Y			
G.lcasub	Y	Y		Y			
G.madsu b	Y	Y		Y			
G Suppl. 41	N	N		N	N		N [specify]
G.781	Y	Y		N	Y		N [specify]
G.783	Y	Y		N	Y		N [specify]
G.798	Y	Y		N	Y		N [specify]
G.808.1	Y	Y		N	Y		N [specify]
G.808.2 (ex G.gps.2)	Y	Y		N	Y		N [specify]
G.829	Y	Y		N	Y		N [specify]
G.873.1	Y	Y		N	Y		N [specify]

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
G.873.2 (ex G.otnprot .2)	Y	Y		N	Y		N [specify]
G.8021/ Y.1341	Y	Y		N	Y		N [specify]
G.8031/ Y.1342	Y	Y		N	Y		N [specify]
G.8032/ Y.1344	Y	Y		N	Y		N [specify]
G.8121/ Y.1381	Y	Y		N	Y		N [specify]
G.8131/ Y.1382	Y	Y		N	Y		N [specify]
G.8132/ Y.1383	Y	Y		N	Y		N [specify]
X.87/Y.1 324	Y	Y		N	Y		N [specify]
X.msr	Y	Y		N	Y		N [specify]
G.8011.3 /Y.1307. 3	Y	Y		N			

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
G.8011.4 /Y.1307.4	Y	Y		N			
G.8011.5 /Y.1307.5	Y	Y		N			
G.8012/ Y.1308	Y	Y		N			
G.8112/ Y.1371	Y	Y		N			
G.mplstp oam	Y	Y		N			
G.709/Y. 1331	Y	Y		N			
G.7041/ Y.1303	Y	Y		N			
G.7042/ Y.1305	Y	Y		N			
G.7043/ Y.1343	Y	Y		N			
G.ptnni	Y	Y		N			
G.803	N	N		N	N		N [specify]

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
G.872	N	N		N	N		N [specify]
G.8010/ Y.1306	N	N		N	N		N [specify]
G.8080/ Y.1304 (ex G.ason)	N	N		N	N		N [specify]
G.8110/ Y.1370	N	N		N	N		N [specify]
G.8601/ Y.1391 (ex G.asm)	N	N		N	N		N [specify]
G.pbb-te	N	N		N	N		N [specify]
G.8251	Y	Y					
G.8261/ Y.1361 (ex G.pactim ing)	Y	Y					

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
G.8262/ Y.1362 (ex G.paclock)	Y	Y					
G.8263/ Y.1363 (ex G.paclock-bis)	Y	Y					
G.8264/ Y.1364 (ex G.pacmod)	Y	Y					
G.8265/ Y.1365 (ex G.pacmod-bis)	Y	Y					
G.8266 (ex G.pactiming-bis)	Y	Y					

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
G.831	Y	Y					
G.874	Y	Y					
G.874.1	Y	Y					
G.875 (ex G.oni)	Y	Y					
G.876 (ex G.otn-snmp)	Y	Y					
G.7710/ Y.1701	Y	Y					
G.7713/ Y.1704	Y	Y					
G.7713.1 /Y.1704.1	Y	Y					
G.7713.2 /Y.1704.2	Y	Y					

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
G.7713.3 /Y.1704.3	Y	Y					
G.7714/ Y.1705	Y	Y					
G.7714.1 /Y.1705.1	Y	Y					
G.7714.2 /Y.1705.2	Y	Y					
G.7715/ Y.1706	Y	Y					
G.7715.1 /Y.1706.1	Y	Y					
G.7715.2 /Y.1706.2	Y	Y					
G.7716/ Y.1707 (ex G.lcs)	Y	Y					

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
G.7718/ Y.1709	Y	Y					
G.7718.1 /Y.1709. 1	Y	Y					
G.8051/ Y.1345 (ex G.eot- mgmt)	Y	Y					
G.8052/ Y.1346 (ex G.eot- mgmt- info)	Y	Y					
G.8151/ Y.1374 (ex G.tmpls- mgmt)	Y	Y					

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
G.8152/ Y.1375 (ex G.templates- mgmt- info)	Y	Y					
G.eot- mgmt- info	Y	Y					
G.vcm	Y	Y					
O.182	Y	N		N			
O.SyncEj itter (ex O.packetj itter)	Y	N		N			
L.10	Y	N		N			
L.26	Y	N		N			
L.43	Y	N		N			
L.57 (ex L.blow)	Y	N		N			
L.60	Y	N		N			
L.caind	Y	N		N			

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
L.cda	Y	N		N			
L.cigd	Y	N		N			
L.ciwd	Y	N		N			
L.cna	Y	N		N			
L.fmun	Y	N		N			
L.fubt	Y	N		N			
L.mpot	Y	N		N			
L.teib	Y	N		N			
L.66 (ex L.omif)	Y	N		N			
L.coi	Y	N		N			
L.fhm	Y	N		N			
L.gpsm	Y	N		N			
L.idsa	Y	N		N			
L.limt	Y	N		N			
L.ofid	Y	N		N			
L.omhp	Y	N		N			
L.omtl	Y	N		N			

ITU-T Rec.	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
L.recc	Y	N		N			
L.wsn	Y	N		N			
L.42	Y	N		N			
L.aid	Y	N		N			
L.pon	Y	N		N			
L.shropt	Y	N		N			
L.uara	Y	N		N			

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ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
H.248 systems (Note 1)	Y	Y		N		ETSI Tispan, 3GPP, MSF	N [specify]
H.323 systems (Note 2)	Y	Y		N		ETSI	N [specify]
H.261	Y	Y		N		N	
H.262	Y	Y		N	Y	ISO/IEC 13818-4:2004 (Conformance testing) and ISO/IEC TR 13818-5:2005 (Software simulation)	
H.263	Y	Y		N		N	
H.264 ISO/IEC 14496-10	Y			Y		H.264.1 and H.264.2 are twin texts with ISO/IEC	N [specify]
G.7xx speech & audio codecs	Y	Y		Y (Note 3)		N (4)	Possibly [specify]

ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
T.800 JPEG-2000	Y			Y		Specified in T.803. JPEG-2000 is a common text with ISO/IEC 15444-1.	N [specify]
T.802 (Motion JPEG-2000)	Y		Test vectors			T.802 is a common text with ISO/IEC 15444-3.	N [specify]
F.162	(Note 5)	(Note 5)					
F.163	(Note 5)	(Note 5)					
F.170	(Note 5)	(Note 5)					
F.171	(Note 5)	(Note 5)					
F.182bis	(Note 5)	(Note 5)					
F.185	(Note 5)	(Note 5)					
F.190	(Note 5)	(Note 5)					
T.4	Y	Y		N	N		Y [specify]
T.5	Y	N		Y	N		N [specify]
T.6	Y	Y		N	N		N [specify]
T.22	N	N		N	N		N [specify]
T.23	N	N		N	N		N [specify]
T.24	N	N		N	N		N [specify]

ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
T.30	Y	Y		N	N		Y [specify]
T.31	Y	Y		N	N		Y [specify]
T.32	Y	Y		N	N		Y [specify]
T.33	(Note 5)	(Note 5)					
T.35	Y	N		N	N		Y [specify]
T.36	(Note 5)	(Note 5)					
T.37	N	Y		N	N		Y [specify]
T.38	N	Y		N	N		Y [specify]
T.39,	N	N		N	N		N [specify]
T.42	(Note 5)	(Note 5)					
T.43	(Note 5)	(Note 5)					
T.44	(Note 5)	(Note 5)					
T.45	(Note 5)	(Note 5)					
T.66	Y	N		N	N		Y [specify]
T.503	(Note 5)	(Note 5)					
T.563	(Note 5)	(Note 5)					
V.8	N	N		N	N		N [specify]
V.8bis	N	N		N	N		N [specify]

ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
V.17	N	Y		N	N		Y [specify]
V.21	N	Y		N	N		Y [specify]
V.22	N	Y		N	N		Y [specify]
V.22 bis	N	Y		N	N		Y [specify]
V.24	N	Y		N	N		Y [specify]
V.27	N	Y		N	N		Y [specify]
V.27 bis	N	Y		N	N		Y [specify]
V.27 ter	N	Y		N	N		Y [specify]
V.29	N	Y		N	N		Y [specify]
V.32	N	Y		N	N		Y [specify]
V.32 bis	N	Y		N	N		Y [specify]
V.34	N	Y		N	N		Y [specify]
V.42	Y	Y		N	N		Y [specify]
V.42 bis	Y	Y		N	N		Y [specify]
V.43	N	Y		N	N		Y [specify]
V.44	Y	Y		N	N		Y [specify]
V.56 bis	Y	N		Y	N		N [specify]

ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
V.56 ter	Y	N		Y	N		N [specify]
V.59	Y	N		N	N		N [specify]
V.61	Y	Y		N	N		Y [specify]
V.70	Y	Y		N	N		Y [specify]
V.75	Y	Y		N	N		Y [specify]
V.76	Y	Y		N	N		Y [specify]
V.80	Y	N		N	N		Y [specify]
V.90	Y	Y		Y	N		Y [specify]
V.91	Y	Y		N	N		Y [specify]
V.92	Y	Y		Y	N		Y [specify]
V.110	Y	Y		N	N		Y [specify]
V.120	Y	Y		N	N		Y [specify]
V.130	N	Y		N	N		Y [specify]
V.150.X	N	Y		N	N		Y [specify]
V.151	N	Y		N	N		Y [specify]
V.152	N	Y		N	N		Y [specify]
V.250	Y	N		N	N		Y [specify]

ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
V.251	Y	N		N	N		Y [specify]
V.252	Y	N		N	N		Y [specify]
V.253	Y	N		N	N		Y [specify]

Notes:

1.	<p>H.248 systems comprise the base protocol Recommendation in H.248.1 and add-on modules (called “<i>Packages</i>”) found in the other H.248.x texts. Some of the modules are interdependent (e.g. a package that expands the features of another package). H.248 is suitable for conformity and interoperability testing however given the usage of between an MGC and MG the behaviour really needs to be tested as part of an overall system, i.e. call control behaviour drives H.248 behaviour which drives bearer/media behaviour. When used in an overall system, H.248 is typically "profiled" and testing would occur against this. ITU-T SG16 has up until this stage not developed any profiles. This has been left up to ETSI TISPAN, 3GPP, MSF. There are currently no tests specified in any of the H.248.x sub-series and it is unlikely that development of additional normative text to describe test suites work would be supported by contributions. However, there are tests available from other SDOs e.g. MSF has developed several H.248/Megaco interoperability agreements (see: http://www.msforum.org/techinfo/approved.shtml).</p>
2.	<p>H.323 systems comprise in addition to the base Recommendation in H.323 some mandatory and optional elements specified in other Recommendations. To-date, they are: H.323, H.225.0, H.235 Series, H.245, H.246, H.283, H.341, H.361, H.450 Series, H.460 Series, and</p>

	<p>H.500 Series. It should be noted that many H.323 media gateway controllers use H.248 and that there are also media-related specifications like T.38, V.150.x, V.151, V.152, and all G-series and H-series audio and video codecs. This makes it difficult to draw the line on what makes up the H.323 system.</p>
3.	<p>Speech and/or audio codec Recommendations in the G.7xx series contain either a set of test vectors or reference ANSI C source code that can be used to verify compliance with the Recommendation. Since 1995, the standardization of G.729 and G.723.1, ANSI-C code constitutes an integral part of the ITU-T speech and audio coding Recommendations. For the previous standards (G.711, G.726, G.727, G.722, G.728) their C-codes are in the ITU-T software tools library (ITU-T G.191 Annex A). G.711's compliance is verified through the provisions in G.712.</p> <p>Further guidance could be developed on how to use reference ANSI C source code of each of the G.7xx series Recommendations in the assertion of compliance of an implementation.</p>
4.	<p>ITU-T G.722.2 is also normalized in 3GPP as AMR-WB (3 GPP TS 26.190)</p>
5.	<p>Information for these Recommendations need to be further researched</p>

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ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
X.290					Y	ISO/IEC 9646-1	
X.291					Y	ISO/IEC 9646-2	
X.292					Y	ISO/IEC 9646-3	
X.293					Y	ISO/IEC 9646-4	
X.294					Y	ISO/IEC 9646-5	
X.295					Y	ISO/IEC 9646-6	
X.296					Y	ISO/IEC 9646-7	

Tree and Tabular Combined Notation (TTCN)

ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing	Parameters to be tested	Tests suites available in	Tests suites available	Reference to the applicable Test Suite	Who studies additional / new test suites ITU/ Others
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	Conformity (c)	Interoperability (i)					
Z.161						ETSI ES 201873-1	
Z.162					Y	ETSI ES 201873-2	
Z.162					Y	ETSI ES 201873-3	
Z.164					Y	ETSI ES 201873-4	
Z.165					Y	ETSI ES 201873-5	
Z.166					Y	ETSI ES 201873-6	
Z.167					Y	ETSI ES 201873-7	
Z.168					Y	ETSI ES 201873-8	
Z.169					Y	ETSI ES 201873-9	
Z.170					Y	ETSI ES 201873-10	

Supplements to X-series recommendations

ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
X.Sup4				N			
X.Sup5				N			

ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
X.224					Y	ISO/IEC 8073	
X.233					Y	ISO/IEC 8473-1	
X.234					Y	ISO/IEC 8602	
X.273					Y	ISO/IEC 11577	
X.274					Y	ISO/IEC 10736	
X.622					Y	ISO/IEC 8473-3	

ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
X.623					Y	ISO/IEC 8473-4	
X.625					Y	ISO/IEC 8473-5	
X.633					Y	ISO/IEC 14700	
X.634					Y	ISO/IEC 14699	

OSI upper layer protocols (X.245, X.246, X.247, X.248, X.249, X.255, X.256, X.257)

ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
X.245					Y	ISO/IEC 8327-2	
X.246					Y	ISO/IEC 8823-2	
X.247					Y	ISO/IEC 8650-2	

ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
X.248					Y	ISO/IEC 9066-3	
X.249					Y	ISO/IEC 9072-4	
X.255					Y	ISO/IEC 9548-2	
X.256					Y	ISO/IEC 9576-2	
X.257					Y	ISO/IEC 10035-2	

OSI management information (X.282, X.283, X.284)

ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
X.282					Y	ISO/IEC 10742	
X.283					Y	ISO/IEC 10733	
X.284					Y	ISO/IEC 10737	

Generic upper layer security (X.834, X.835)

ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
X.834						ISO/IEC 11586-5	
X.835						ISO/IEC 11586-6	

MHS (X.481, X.482, X.483, X.484, X.485, X.486, X.487, X.488)

ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
X.481						ISP 12062-2	
X.482						ISP 10611-3	
X.483						ISP 10611-4	
X.484						ISP 10611-5 & ISP 10611-6	
X.485						N	

ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
X.486						ISP 12063-2 Withdrawn	
X.487						ISP 12062-6	
X.488						ISP 12063-5 Withdrawn	

Directory (X.581, X.582, X.583, X.584, X.585, X.586)

ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
X.581						14608-1 Withdrawn	
X.582						14608-2 Withdrawn	
X.583						13248-1 Withdrawn	
X.584						13248-2 Withdrawn	
X.585						13248-3 Withdrawn	

ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
X.586						13248-4 Withdrawn	

CCR (X.853)

ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
X.853						9805-2	

Transaction processing (X.863)

ITU-T Rec./ Sub-series or Supl. or System	Suitability for testing		Parameters to be tested	Tests suites available in ITU-T Recs [Y/N]	Tests suites available from SDOs / Forums / Labs [Y/N]	Reference to the applicable Test Suite (existing ITU-T Recs. and/or other SDOs / Forums)	Who studies additional / new test suites ITU/ Others
	Conformity (c)	Interoperability (i)					
X.863						10026-4	

NOTE: that there are OSI Recommendations with PICS proformas that are not under the SG 17 responsibility, (e.g., SG 2 for X.700-series).

Annex C. The set of pilot projects of conformity assessment against ITU Recommendations

#	Title of planned/on going Pilot Project under C&I Programme	ITU-T Recommendation(s)	SGs focal point	Interested companies	Motivations	Short-term strategy
	Indicate the title of planned or on-going Pilot Project which SG is going to start and maintain		Indicate the contact of responsible persons/experts (rapporteur, editor, etc)	Specify the companies are going or have already involved to the project	Describe the reason and specify expecting results under ITU C&I Programme	Describe the short-term strategy (one year) for achieving the goals of the Pilot Project

Annex D. ITU-TSB Interoperability Service Introduction

ITU provides the full set of services to run interoperability events and is happy to customize services according to customer needs. In addition to interoperability testing events (interop), ITU also offers services to run showcasing events (showcasing), i.e., events where the technology tested is shown to interested parties (combination of exhibition and workshop). ITU organizes events in Geneva at ITU headquarters (or at other facilities in Geneva) as well as anywhere in the world. The services offered are as follows:

D.1 Interop technical management

- Provision of a customized test bed with Internet access and power outlets
- Design, installation and teardown of the test infrastructure
- IT support
- Scheduling and supervision of test session
- Drafting of the final test report
- Collecting feedback from the interop event for the standards process

D.2 Interop events management

- Dedicated interop coordinator
- Setting up of conference calls; drafting of summary reports of conference calls; follow up of action items
- Setting up and hosting the interop event website
- Local and logistical arrangements (hosting site, hotels, catering, shipment, ...)
- Provision of 24/7 security
- 24/7 access to the testing site
- Visa application support
- Online registration & payment
- Advice on legal aspects and drafting of MoUs, NDAs, rules of engagement
- Development of event promotional kit
- ITU-branding of the event as appropriate
- Publicity via newslogs and press releases

D.3 Showcasing technical management

Same as in A.1.

D.4 Showcasing events management

Same as in A.2. In addition:

- Organization of workshop sessions in connection with the showcasing event
- Event recording through a professional video recorder or TV crew

D.5 Experience

ITU has proven experience in hosting interoperability events. ITU has been organizing and facilitating Interop testing events and showcasing events since July 2010 in Geneva, Singapore, India, Brazil and UAE. In particular, ITU organized four IPTV interop events which were each coupled with showcasing events, and hosted the ITU-T G.hn (home networking standard) interop event. Details are available at ITU's interop website: <http://www.itu.int/interop>.

D.5.1 [1st ITU IPTV Interop Event](#) with showcasing event; 20-23 July 2010, Geneva, Switzerland

- [Event Highlights via YouTube](#)
- [Event Photos](#)
- [Press release](#)

D.5.2 [2nd ITU IPTV Interop Event](#) with showcasing event; 23-24 and 27 September 2010; Singapore

- [Event Highlights via YouTube](#)
- [Event Photos](#)

D.5.3 [3rd ITU IPTV Interop Event](#) with showcasing event; 14-17 December 2010; Pune, India

- Event video
Originally aired on Indian Television (Bloomberg UTV in India). Via YouTube available at:
 - o [Part 1](#)
 - o [Part 2](#)
 - o [Part 3](#)
- [Event Photos](#)

D.5.4 [4th ITU IPTV Interop Event](#) with showcasing event; 18-22 July 2011, Rio de Janeiro, Brazil

- [Event photos](#)

D.5.5 [1st G.hn \(home networking\) interop testing](#); 23-27 May 2011, Geneva, Switzerland

D.5.6 [IPTV Showcasing](#) with [workshop](#), Dubai, UAE, 20-22 September 2011

- [Event Photos](#)

D.5.7 [IPTV Showcasing](#), Telecom World-2011, Geneva, Switzerland, 24-27 October 2011

- [Press release](#)

D.6 Facilities

D.6.1 Meeting rooms

ITU has numerous options for fully equipped meeting rooms (audio and video, Internet access, power; boardroom style or classroom style; sizes for up to 30, 50, 100 or 250 people). ITU also has facilities to allow remote participants to dial into meeting rooms and feed the audio of remote participants into the audio system of the meeting room.

D.6.2 Offices

There are four offices (~10m²) on the 2nd floor of ITU's Montbrillant Building (see Figure 2).

D.6.3 Event spaces

Option a: Ground floor Montbrillant

An open space about 250 m² on the Ground floor of ITU's Montbrillant building is available for interop events. This open space can be separated from the other side of the ground floor by large panels. Figure 1 shows an example of booth configuration.

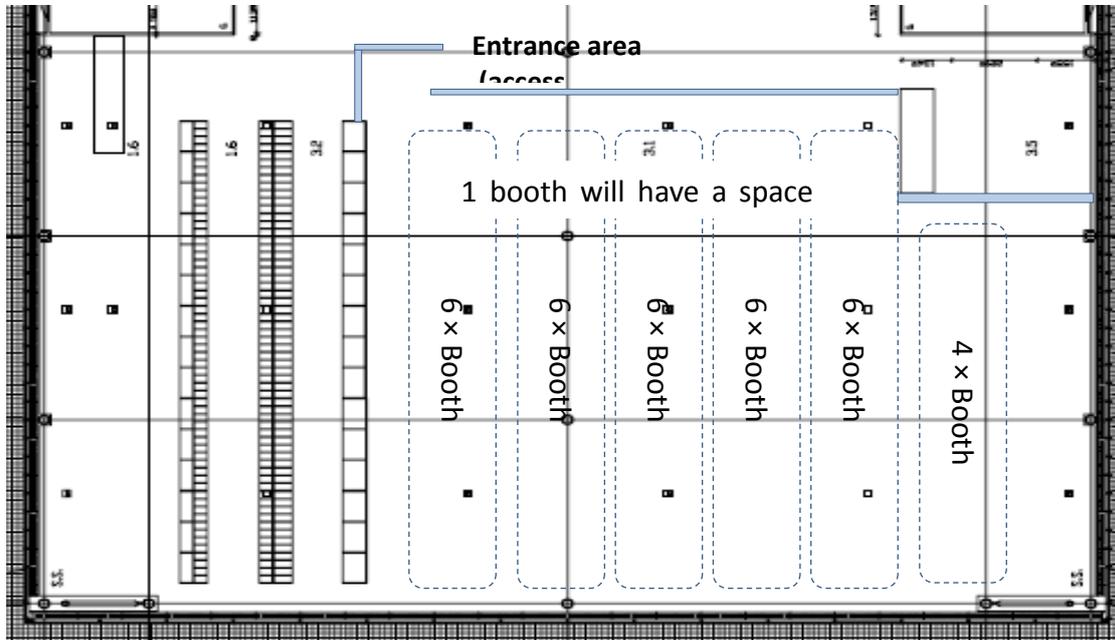


Figure 1 Example of booth configuration on the ground floor Montbrillant

Option b: 2nd floor Montbrillant

An open space about 230 m² connected to four offices on the 2nd floor of ITU's Montbrillant building can be used. This open space can be separated from the other side of the 2nd floor by large panels. Figure 2 shows an example of booth configuration.

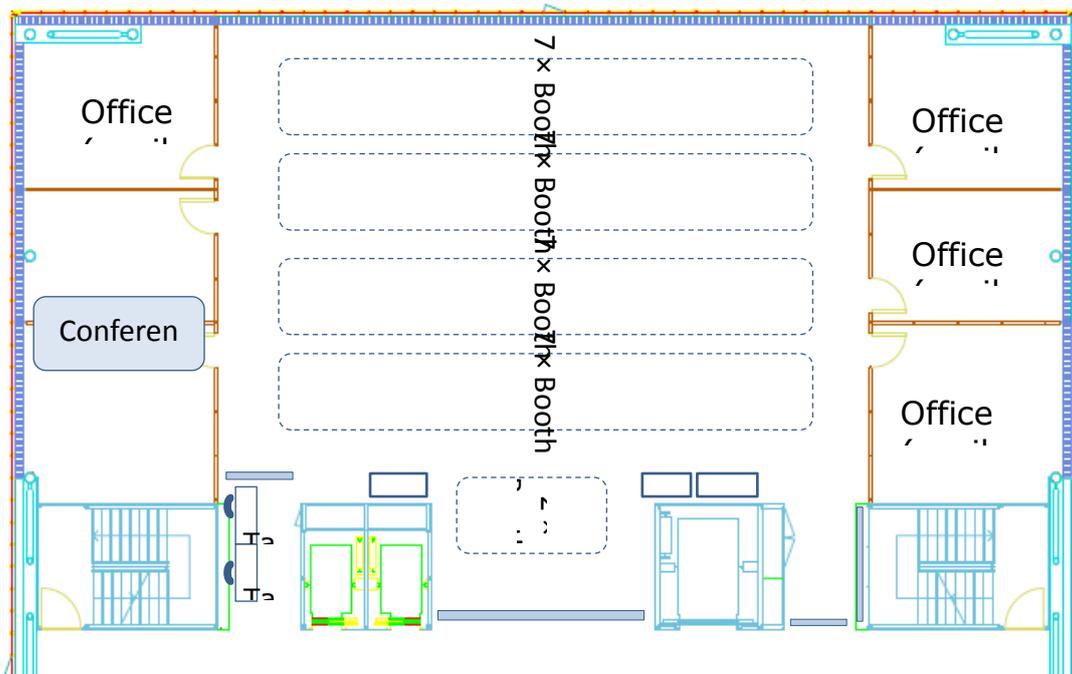


Figure 2 Example of booth configuration on the 2nd floor Montbrillant

Option c: [CICG](#) (International Conference Centre Geneva)

CICG is located next to the ITU buildings. ITU can arrange the CICG meeting rooms and open spaces with a variety of sizes up to 600 m² (additional cost may apply).

Option d: ITU's meeting rooms

ITU's meeting rooms, such as Popov room (around 500 m² with 250 seats, the biggest ITU's meeting room), could also be used for interop events. Chairs could be removed for easy maneuvering.

Option e: Combination of the above event spaces

Options a, b, c and d can also be combined.

D.6.4 Internet

Internet access through wireless and wired LAN, IPv6 and 3G mobile are available in the ITU premises.

D.7 Logistics

D.7.1 Shipping and custom

ITU has a secure storage area in its premises and will be able to receive the advanced shipping equipments from Monday to Friday during normal working hours. Information on International shipping to/from Switzerland can be found at: <http://www.ezv.admin.ch/?lang=en>.

For custom clearance, information about the use of ATA carnet is available at: http://www.ezv.admin.ch/zollinfo_firmen/verzollung/00367/index.html?lang=en.

D.7.2 Visa application support

ITU can provide its members and individuals from its member states with the visa application support to enter Switzerland.

D.7.3 Registration & Badge

ITU will provide online registration system through the ITU website for the participants' registrations, and badge distribution to participants at the entrances of ITU buildings.

D.7.4 Catering

ITU's in-house cafeteria is open from 8:00 to 17:00. Lunch tickets (18CHF/person) for the ITU cafeteria and catering coffee (3 CHF/cup) can be arranged at the testing area from Monday to Friday (the catering prices are based on the tariff 2012). There are also numerous restaurants in immediate vicinity of ITU.

D.7.5 Hotels

Participants of ITU interop events can benefit from ITU's preferential rates for hotels.

D.8 Costs

ITU charges for the organization of interop events. Costs to the participants of interop events vary according to the services provided and are negotiated separately for each event. For ITU's IPTV interop events and showcasing events, costs for a company which participated for the first time were CHF 3000 with no restriction on the number of delegates per company, and CHF 2400 for companies which had already participated in an ITU IPTV interop event at least once.

D.9 Contact details

For further information, please contact:

- **For interop proposal:** Ms Xiaoya Yang, office +41 22 730 6206, mobile: +41 79 249 4882, email: Xiaoya.Yang@itu.int; or
- **For technical management and events management:** Ms Kaoru Mizuno, office +41 22 730 6226; mobile +41 79 599 1467, email: Kaoru.Mizuno@itu.int.

Annex E. ITU C&I Portal and conformity database introduction

For increasing the efficiency of C&I Programme the ITU C&I Portal has been launched on the ITU-T web-site (<http://www.itu.int/net/ITU-T/C-I/>) and includes the full list of actions and results of ITU C&I Programme implementation:

- [**The ITU Conformity and Interoperability \(C&I\) Programme Concepts and Guidance**](#)
- [**ITU Conformity Database**](#)
- [**Interoperability and “ITU Interop Events”**](#)
- [**Capacity Building & Guidelines for establishing test centres**](#)
- [**Vendors, Industry, Testing**](#)
- [**Laboratories**](#)
- [**Standards Developing Organizations and International Organizations**](#)

The ITU conformity database will allow companies to make a public declaration that their products conform to ITU Recommendations. The database is informative, voluntary and free of charge and available to both ITU and non-ITU members. A vendor can choose among four “routes” to enter data into the database (see table 1). For Routes 1 - 3, tests are performed by a 3rd party lab.

Annex F. TSB Action plan and summary record of Council-12 about ITU C&I Programme implementation ([C12/48](#) and [C12/91](#) of Council-12)

Proposed C&I Action Plan

As KPMG proposes various scenarios and options, the following focused C&I action plan is proposed.

4.1 Pillar 1 – Conformity Assessment

- a) ITU-T to decide whether to follow KPMG's recommendation to drop route 4 (vendor self-declaration, i.e., not 3rd party testing) to populate the conformity database. WTSA to identify the appropriate study group to address horizontal issues such as this.
- b) ITU-T to run a pilot of the conformity assessment programme for key technologies for which there is a market demand for such a programme. A test lab or certification body would execute tests. Given a vendor's agreement, an entry would then be made in the ITU-T conformity database. TSB is in discussions with ITU-T SG 15.
- c) ITU-T study groups to identify further technologies for which there is a market demand for a conformity assessment programme and to identify whether test specifications are available and if not, to explore the provision of test specifications. If test specifications are available, they may be turned into e.g. ITU-T Recommendations or supplements.
- d) TSB to gather information from members, vendors, labs, SDOs, Forums and Consortia about labs and to invite them to join the ITU C&I Programme.
- e) TSB to produce a report on measures against counterfeiting (not a KPMG recommendation but Resolution 177 instructs the TSB Director "to assist Member States in addressing their concerns with respect to counterfeit equipment")

4.2 Pillar 2 – ITU Interops

- a) TSB to consult study groups towards identifying and suggesting topics for future events, based on continuous surveillance of market and technological developments and on probing of members' needs, and organize those events. In addition to organizing further ITU interops on IPTV and G.hn, discussions are taking place to organize interops on multimedia conferencing (IMTC's (International Multimedia Teleconferencing Consortium) "Superop" event which tests among others the ITU-T SG 16 H-series); QoS aspects (ITU-T SG 12); e-health (with Continua Health Alliance; ITU-T SG 16).

4.3 Pillar 3 – Capacity building (ref. 4.7.3 KPMG – RF)

- a) BDT, in collaboration with TSB, to continue to offer C&I training courses. The ITU Regional Offices will play an active role for identify the right partners in the field and for organizing such training activities.

4.4 Pillar 4 – Creation of test labs in the regions

- a) The ITU Secretariat to continue to promote, through cooperation agreements and MoUs, partnerships with external organizations for assisting countries in addressing the establishment of an appropriate conformity and interoperability regime in such countries.
- b) To organize experts meetings at regional and subregional level for promoting awareness in developing countries for establishing the most appropriate C&I regime in such countries. The strategy is to create a network-like test centres in the regions building up on existing labs, to reduce costs, and to encourage agreements to assign to each centre a specific technology in order to cover most of them among all the participating labs.
- c) The establishment, when possible, of MRAs (mutual recognition agreement) will be also discussed at regional and subregional levels. ITU will produce a set of guidelines on "Mutual recognition agreement/arrangement framework for regulated telecommunications products". Such an MRA

framework could be applied e.g. for the African region, with ITU as the repository of signatories and an organization such as ATU, or other appropriate body, as the "convening body" for the MRA development. The ITU Regional Offices will play an active role for discussing the establishment of MRAs between countries.

4.5 Pillars 1-4

- a) The ITU Secretariat to develop and formalize a partnership strategy. Potential partners for further cooperation agreements/MoUs include e.g. IECEE, UNIDO, [IQNet](#), [DAKKS](#), [ONAC](#), [ANSI](#), [INMETRO](#), [ANATEL](#), KAS, [COFRAC](#), [ICONTEC](#), [NYCE](#), [CERT](#), [CPqD](#), [CTTL](#), [ZNIIS](#), [COPANT](#).
- b) ITU to participate at events of IEC, ISO, [ILAC](#), [IAF](#), [BIPM](#), [DCMAS](#), [ISO/CASCO](#) etc.
- c) ITU to continue organizing regional C&I forums and organize 1-2 sessions as part of the WTSA-12 preparatory meetings, workshops or back to back with events of regional organizations (CITEL, CIS, ARB, ATU, CITEL, APT, CTO, PITA).
- d) ITU Secretariat to continue enhancing the ITU C&I Portal.
- e) ITU to organize a (perhaps annual) Conformity Assessment, Certification and Accreditation Bodies "All Star" Forum for ITU-ICTs technologies.
- f) ITU Secretariat to produce C&I promotion material.
- g) ITU Secretariat to study potential revenue generation.
- h) ITU Secretariat to ensure succession planning.
- i) Secretary-General to take resources on C&I into account when developing the 2014-2015 budget.
- j) ITU Secretariat to provide an update of the C&I programme at the next Council meeting.

Summary record

5. Conformance and interoperability (Documents C12/37, C12/48, C12/63, C12/67 and C12/73)

5.1 The representative of KPMG introduced Document C12/37, containing the general conclusions of the final report by KPMG concerning the provision of a business plan for conformance and interoperability. The business plan outlined the level and skills in human resources required to implement the Conformance and Interoperability (C&I) Programme, which was based on four pillars: conformance assessment; interoperability events; human resource capacity building; and test facility development.

5.2 The councillor from the United States, introducing Document C12/73, drew particular attention to a number of points, such as the difference between the notion of revenue generation and that of cost recovery, and the distinction between the concepts of conformance and interoperability. The Director of TSB commented on a number of the issues raised in the document, stating *inter alia* that ITU did not currently have the means for conducting a market study, which, as KPMG had noted, would probably be premature, and that there was a need within the market since a group of companies had recently requested TSB to organize conformance tests based on the standards produced by ITU-T Study Group 15. Regarding the ITU Mark, a decision concerning the implementation of such a mark would be postponed until pillar 1, conformity assessment, has reached a more mature stage of development. Regarding route 4 he proposed this should be considered in ITU-T and the Council could recommend the WTSA establish a suitable forum for its discussion.

5.3 The councillor from Canada, introducing Document C12/67, said that the business plan requested from KPMG was not complete, that there was a need to ensure that a preliminary analysis was completed prior to implementing the project, and that funding for a completed business plan would not be possible until after the budget for 2014-2015 had been approved.

5.4 The councillor from the Russian Federation, introducing Document C12/63, emphasized the need to factor in the approach used in the WTO Agreement on Technical Barriers to Trade (TBT).

5.5 The Deputy-Director of TSB, introducing Document C12/48, presented the proposed conformance and interoperability action plan, emphasizing that implementation of KPMG's base scenario for the 2012-2013 budget would not require any additional resources. He invited the Council to approve the action plan.

5.6 One councillor associated himself with the position of the Russian Federation, noting that it was important to seek regional cooperation and expressing the hope that the action plan would be implemented rapidly. Another councillor called for the matter to be discussed not in an atmosphere of confrontation but in a spirit of consensus, and for ITU to listen to the concerns of the various stakeholders, particularly Sector Members. Another councillor supported the documents from the United States and Canada, emphasizing that it was important to take account of market demand and study group expertise. One councillor pointed out that conformance and interoperability centres and agreements were very important for developing countries.

The meeting was suspended at 1215 hours and resumed at 1430 hours.

5.7 Several councillors expressed general support for the proposed action plan, noting that it constituted a living document that could be shaped as experience was gained.

5.8 One councillor recalled that the conformance and interoperability programme was intended to respond to problems faced by developing countries. The KPMG report did not detail costs and revenue or give an understanding of risks and opportunities, and he asked whether a further study would be done.

5.9 Another councillor said that the scarce TSB budget resources should not be used to develop a detailed business plan. Rather, Member States and Sector Members should collaborate to fill in any gaps. By the time of its next session, the Council would have the benefit of more experience on which to base its decision.

5.10 One councillor questioned the viability of an ITU-mark, given that other certifications already existed, and asked whether a cost-benefit analysis had been carried out.

5.11 The Chairman of TSAG emphasized the importance of partnership and collaboration, and encouraged all concerned to take advantage of the reflector established on the ITU-T website, in order to ensure that all issues were identified and resolved.

5.12 Responding to questions raised by councillors, the Deputy Director of TSB said that he hoped to be able to report to WTSA-12 or to Council-13 on the results of a pilot test in discussions between TSB and ITU-T SG 15. The resources budgeted for 2012-2013 were sufficient to cover the essentials of the proposed action plan. A proposal for a market study, which is likely to cost at least CHF 500,000, could be presented to Council-13.

5.13 The Chairman noted that no additional resources were necessary to implement the conformance and interoperability programme in 2012-2013, that ITU study groups would help to shape the programme, and that a market-driven initiative by industry players to run conformance assessment with regard to an ITU-T Recommendation would be a good testing ground of the market. Moreover, given the concerns that had been expressed, the Council would welcome the forthcoming report on counterfeiting. Further noting that ITU would have no role in negotiating mutual recognition agreements but would only facilitate them through guidance documents taking into account international and regional best practices when developing these guidelines, and that technical aspects of the business plan would be discussed within ITU-T, he suggested that the

Council agree on the proposed action plan, which should include the proposals by the United States on the way forward.

5.14 It was so **agreed**.

Annex G. [Resolution 76](#) of WTSA-12 (Rev. Dubai, 2012)

Studies related to conformance and interoperability testing, assistance to developing countries¹, and a possible future ITU Mark programme

(Johannesburg, 2008; Dubai, 2012)

The World Telecommunication Standardization Assembly (Dubai, 2012),

recognizing

- a) that interoperability of international telecommunication networks was the main reason to create the International Telegraph Union in the year 1865, and that this remains one of the main goals in the ITU strategic plan;
- b) that conformity assessment is the accepted way of demonstrating that a product adheres to an international standard and is increasingly important in the context of World Trade Organization members' international standardization commitments under the Agreement on Technical Barriers to Trade;
- c) that Recommendations ITU-T X.290 to ITU-T X.296 specify a general methodology for conformance testing of equipment to Recommendations of the ITU Telecommunication Standardization Sector (ITU-T);
- d) that conformance testing does not guarantee interoperability but would increase the chance of interoperability of equipment conforming to ITU standards;
- e) that very few of the current ITU-T Recommendations identify interoperability or conformance testing requirements;
- f) that Resolution 123 (Rev. Guadalajara, 2010) of the Plenipotentiary Conference instructs the Secretary-General and the Directors of the three Bureaux to work closely with each other in pursuing initiatives that assist in bridging the standardization gap between developing and developed countries;
- g) that technical training and institutional capacity development for testing and certification are essential issues for countries to improve their conformity assessment processes, to promote the deployment of advanced telecommunication networks and to increase global connectivity;
- h) that it is not appropriate for ITU itself to enter into certification and testing of equipment and services that many regional and national standards bodies also provide for conformance testing;
- i) that Article 17 of the ITU Constitution, while providing that the functions of ITU-T shall fulfil the purposes of the Union relating to telecommunication standardization, stipulates that such functions are to be performed "bearing in mind the particular concerns of the developing countries";
- j) the excellent results achieved by ITU in implementing the mark for Global Mobile Personal Communications Systems (GMPCS),

further recognizing

that providing for interoperability should be the ultimate aim of future ITU-T Recommendations,

¹ These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition.

considering

- a) that there is an increasing number of complaints that equipment is often not fully interoperable with other equipment;
- b) that some countries, especially the developing countries, have not yet acquired the capacity to test equipment and provide assurance to consumers in their countries;
- c) that increased confidence in the conformance of information and communication technologies (ICT) equipment with ITU-T Recommendations would increase the chances of end-to-end interoperability of equipment from different manufacturers, and would assist developing countries in the choice of solutions;
- d) that the 2012 session of the ITU Council in reviewing the ITU Conformance and Interoperability Business Plan for the long-term implementation of the conformance and interoperability (C&I) programme agreed on an action plan which in particular invited this assembly to identify the appropriate study group to address the Sector's activities related to the ITU C&I programme across all study groups,
- e) that the Plenipotentiary Conference adopted Resolution 177 (Guadalajara, 2010);
- f) that the World Telecommunication Standardization Assembly adopted Resolution 76 (Johannesburg, 2008);
- g) that the World Telecommunication Development Conference adopted Resolution 47 (Rev. Hyderabad, 2010);
- h) that the ITU Radiocommunication Assembly adopted Resolution ITU-R 62 (Geneva, 2012);
- i) the progress reports presented by the Director of the Telecommunication Standardization Bureau to the Council at its 2009, 2010, 2011 and 2012 sessions and to the 2010 plenipotentiary conference;
- j) the importance, especially to developing countries, that ITU takes up a leading role in interoperability issues, and that this is an objective expressed by the approval of the resolutions listed under d), e), f) and g) above and the proposed C&I programme is intended to address these demands;
- k) the executive summary of the ITU Conformance and Interoperability Business Plan report, highlighting important issues regarding the four pillars of the ITU C&I programme, namely: 1- Conformance assessment; 2- Interoperability events; 3- Capacity building; and 4- Establishment of test centres in developing countries,

noting

- a) that conformance and interoperability requirements to support testing are essential components for developing interoperable equipment that is based on ITU-T Recommendations;
- b) that considerable practical experience exists within the ITU-T membership regarding the production of relevant testing standards and the testing procedures on which the actions proposed in this resolution are based;
- c) the need to assist developing countries in facilitating solutions which will exhibit interoperability and reduce the cost of systems and equipment procurement by operators, particularly in the developing countries, whilst improving product quality;

d) that when interoperability experiments or testing have not been performed, users may have suffered from the lack of interconnection performance between equipment from different manufacturers,

taking into account

a) that ITU-T has in the past occasionally initiated conformance and interoperability testing, as reported in Supplement 2 to the ITU-T A-series Recommendations;

b) that the ITU standardization resources are limited and interoperability testing requires specific technical infrastructure;

c) that a different set of experts is required for writing test suites, interoperability testing standardization, product development and product testing;

d) that it is of advantage if interoperability testing is done by users of the standard who were not involved in the standardization process itself, rather than the standardization experts who have written the specifications;

e) that collaboration with external accreditation, conformity assessment and certification bodies is therefore necessary;

f) that forums, consortia and other organizations have already established certification programmes,

resolves

1 that ITU-T study groups develop the necessary conformance testing Recommendations for telecommunication equipment as soon as possible;

2 that ITU-T Study Group 11 coordinate the Sector's activities related to the ITU C&I programme across all study groups and review the recommendations in the Conformance and Interoperability Business Plan for the long-term implementation of the C&I programme;

3 that ITU-T Recommendations to address interoperability testing shall be progressed as quickly as possible;

4 that ITU-T, in collaboration with the other Sectors as appropriate, shall develop a programme to:

i) assist developing countries in identifying human and institutional capacity-building and training opportunities in conformance and interoperability testing;

ii) assist developing countries in establishing regional or subregional conformance and interoperability centres suitable to perform conformance and interoperability testing as appropriate encouraging cooperation with governmental and non-governmental, national and regional organizations and international accreditation and certification bodies;

5 that conformance and interoperability testing requirements shall provide for verification of the parameters defined in the current and future ITU-T Recommendations as determined by the study groups developing the Recommendations, and for interoperability testing to ensure interoperability taking into account user needs and in consideration of the market demand, as appropriate,

instructs the Director of the Telecommunication Standardization Bureau

1 in cooperation with the Radiocommunication Bureau and the Telecommunication Development Bureau (BDT), to continue to conduct as necessary exploratory activities in each region in order to identify and prioritize the problems faced by developing countries related to achieving interoperability of telecommunication/ICT equipment and services;

2 in cooperation with the Director of BDT, based on results of *instructs the Director of the Telecommunication Standardization Bureau* 1 above, to implement the action plan agreed by the Council at its 2012 session (Document C12/91) as referred to in the Report by the Secretary-General to the 2012 session of the Council (Document C12/48);

3 in cooperation with the Director of BDT to implement an ITU conformance and interoperability programme for possible introduction of an ITU Mark in alignment with the Council 2012 decision in C12/91;

4 to involve experts and external entities as appropriate;

5 to submit the results of these activities to the Council for its consideration and required actions,

instructs the study groups

1 to identify as soon as possible existing and future ITU-T Recommendations that would be candidates for conformance and interoperability testing, taking into account the needs of the membership (e.g. interoperability of next-generation network (NGN) and future network (FN) equipment, terminals, audio/video codecs, access and transport network, other key technologies), that are capable of providing end-to-end interoperable services on a global scale, adding to their content, if necessary, specific requirements within their scope;

2 to prepare the ITU-T Recommendations identified in *instructs the study groups* 1 above, with a view to conducting conformance and interoperability tests as appropriate;

3 to cooperate, as appropriate, with interested stakeholders to optimize studies to prepare test specifications especially for those technologies in *instructs the study groups* 1 above, taking into account user needs and in consideration of the market demand for a conformity assessment programme,

invites the Council

to consider the Director's report referred to in *instructs the Director of the Telecommunication Standardization Bureau* 5 above,

invites Member States and Sector Members

1 to contribute to the implementation of this resolution;

2 to encourage national and regional testing entities to assist ITU-T in implementing this resolution.

Annex H. [Resolution 7](#) of WTSA-12 (Rev. Dubai, 2012)

Collaboration with the International Organization for Standardization and the International Electrotechnical Commission

*(Malaga-Torremolinos, 1984; Helsinki, 1993; Geneva, 1996; Montreal, 2000;
Florianópolis, 2004; Johannesburg, 2008; Dubai, 2012)*

The World Telecommunication Standardization Assembly (Dubai, 2012),

considering

- a)* the purposes of the Union set forth in Article 1 of the ITU Constitution relating to the harmonization of telecommunication facilities;
- b)* the duties of the ITU Telecommunication Standardization Sector (ITU-T) as set forth in Chapter III of the Constitution;
- c)* the interest of both the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) in certain aspects of telecommunications;
- d)* the common interest of ISO and IEC on the one hand and ITU-T on the other in the development of standards on telecommunication and information technologies, on cables, wires and optical fibres and on protection measures which take full account of the needs of manufacturers, users and those responsible for communication systems;
- e)* the need for mutual agreements on other areas of standardization activity of common interest, along the lines of cooperation in the field of telecommunication security between ITU-T Study Group 17 and its counterparts in ISO and IEC;
- f)* the increasing relevance of the ITU conformance and interoperability programme, which has, among other objectives, recalled that ITU-T Recommendations should consider, when applicable, laboratory test procedures able to assess requirements standards confidently,

noting

- a)* that the working methods and timing constraints of the organizations concerned are not the same;
- b)* the increasing demands on financial and specialized professional experts in both telecommunication technology and operations as well as computer science and terminal manufacturing and testing;
- c)* the coordination meeting newly established between the three organizations through their top management;
- d)* the progress made on the basis of existing procedures in the alignment of technical Recommendations with ISO, IEC and ISO/IEC Joint Technical Committee 1 (JTC 1) in areas of joint interest, thanks to the excellent spirit of cooperation which has prevailed;
- e)* the principles of collaboration established between ISO and IEC and particularly with ISO/IEC JTC 1 on information technology as contained in Recommendation ITU-T A.23 and in the ISO/IEC JTC 1 Directives;
- f)* that other standardization activities of a collaborative nature may require coordination;
- g)* the increasing cost of developing international standards,

resolves

- 1 to continue inviting ISO and IEC to examine the ITU-T study programme in the early stages of its studies and vice versa, and to further examine such programmes to take into account ongoing changes, in order to identify subjects where coordination seems desirable, and to so advise the Director of the Telecommunication Standardization Bureau (TSB);
 - 2 to request the Director of TSB, after consultation with the study group chairmen concerned, to reply, and to furnish any additional information requested by ISO and IEC, as it becomes available;
 - 3 to request the Director of TSB to examine and update the programme of cooperation and priority of the study items among ITU-T, ISO and IEC and highlight this information on the ITU-T website on a regular basis;
 - 4 to request the Director of TSB, the study groups and the Telecommunication Standardization Advisory Group to consider and propose further improvements to the procedures for cooperation between ITU-T and ISO and IEC, including setting the priorities for such cooperation, such as conformance assessment schemes and laboratory standards;
 - 5 that the necessary contacts with ISO and/or IEC should be at the appropriate levels and coordination methods should be mutually agreed and regular coordination events arranged:
 - for work where text should be drawn up mutually and kept aligned, procedures in accordance with Recommendation ITU-T A.23 and the Guidelines for Cooperation therein apply;
 - for other activities where coordination between ITU-T and ISO and IEC is required (for example in relation to any mutual agreements, such as the Memorandum of Understanding on standardization in the field of electronic business), clear means of coordination shall be established and regular coordination contacts made;
 - 6 to request the chairmen of study groups to take into account the related work programmes and the progress of projects in ISO, IEC and ISO/IEC JTC 1; further, to cooperate with these organizations as widely as possible and by appropriate means, in order to:
 - ensure that the specifications which have been jointly drawn up remain aligned;
 - collaborate in drawing up other specifications in fields of joint interest;
 - 7 that, for reasons of economy, any necessary collaborative meetings take place as far as possible in association with other meetings;
 - 8 that the report concerning such coordination indicate the status of alignment and compatibility of draft texts on points of common concern, in particular identifying any subject which could be dealt with in a single organization, and cases where cross-referencing would be helpful to users of published International Standards and Recommendations;
 - 9 to invite administrations to contribute significantly to the coordination between ITU-T on the one hand and ISO and IEC on the other by ensuring adequate coordination of national activities associated with the three organizations.
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