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| ITU Member States, Members of the RCC |
| DRAFT REVISION OF RESOLUTION 44 - "Bridging the standardization gap between developing and developed countries" in terms of establishing test centres in developing countries |
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| **Abstract:** | This contribution proposes modifying Resolution 44 to promote the establishment in developing countries of national and/or international centres for testing compatibility, interworking and identification for the Internet of things and its applications. |

Introduction

The Q.39xx series of Recommendations is devoted to testing methods, types and specifications. The basis of this series is Recommendation Q.3900, “Methods of testing and model network architecture for NGN technical means testing as applied to public telecommunication networks”, which introduced the notion of model networks as a basis for testing technical means, services and QoS classes and parameters for next generation networks (NGNs). NGNs, as opposed to previous homogeneous telephone networks, are heterogeneous networks that are used to transmit diverse forms of information (voice, video and data). For that reason, compatibility has emerged as one of the main issues in such heterogeneous NGNs as regards ensuring stable network operation. At the NGN network development stage the notion of global compatibility emerged, encompassing compatibility of technical means, services, and QoS classes and parameters. Recommendation Q.3900 proposed using model networks for testing global compatibility, which was vindicated not only by the development of a set of Recommendations on testing, with the participation of specialists from the Russian Federation, Austria, China, Japan, Republic of Korea and Poland, but also by the creation, along the lines of ITU-D, of an international centre for testing new telecommunication technologies.

Recommendation Q.3900 was approved in 2006 at the start of widespread deployment of new generation networks and network fragments. Still of relevance today, this Recommendation was not intended for testing the Internet of things (IoT). In the study period 2009‑2012, Question 12/11 was opened for study, and work on this Question was supposed to include development of a set of Recommendations on IoT testing. However, there was not at that time a sufficient basis for doing this and the study period in question ended with only one Recommendation, Q.3950, “Testing and model network architecture for tag-based identification systems and functions”. Question 12/11 was retained for the study period 2013-2016 and as part of the work on this Question work began in 2013 to develop a draft Recommendation Q.FW\_IoT/Test “Framework for IoT Testing”.

Considerable experience has by now been acquired in the field of IoT testing. A draft Recommendation has been drawn up, along the lines of Recommendation Q.3900 on NGNs, regarding the architecture and capabilities of a model network for IoT testing. The prototype model network chosen is the model network of the Internet of things laboratory of the Bonch-Bruevich Saint-Petersburg State University of Telecommunications (SPbSUT) which has been in operation since 2012. Its potential was demonstrated to participants of the ITU-T Kaleidoscope 2014 conference. It is envisaged that IoT model networks will be used to test compatibility and interworking of IoT applications. Testing interworking in the context of deployment of IoT applications is becoming especially important owing to the fact that modern IoT architecture solutions are being based on the interaction of things with cloud structures.

With the large-scale introduction of IoT applications expected over the period 2017‑2020 and beyond, another serious issue arises – that of testing IoT identification systems. This is linked to the inevitable exploitation of IoT capabilities during the study period 2017‑2020 for identification of ICT products and combating counterfeit production.

In the light of the above, the proposal is to establish in developing countries national and/or international centres for testing compatibility, interworking and identification for IoT and its applications. The process of setting up and operating such centres will be supported by the development of a set of Recommendations as part of the activities of Study Group 11 during the study period 2017‑2020.

Proposal

Proposals to add provisions to Resolution 44 regarding the establishment of test centres in developing countries are set out in the attached text.

MOD RCC/47A21/1

RESOLUTION 44 (REV. HAMMAMET, 2016)

Bridging the standardization gap between developing[[1]](#footnote-1)1
and developed countries

(Florianópolis, 2004; Johannesburg, 2008; Dubai, 2012; Hammamet, 2016)

The World Telecommunication Standardization Assembly (Hammamet, 2016),

considering

*a)* that Resolution 123 (Rev. Busan, 2014) of the Plenipotentiary Conference, on bridging the standardization gap between developing and developed countries, instructs the Secretary-General and the Directors of the three Bureaux to work closely with each other in pursuing initiatives intended to enhance efforts to bridge the standardization gap between developing and developed countries on follow-up and implementation of the operative paragraphs of that resolution supporting coordination in this respect at the regional level through regional offices and organizations; Member States and Sector Members are invited to make voluntary contributions (financial and in kind) to a fund for bridging the standardization gap and adopt specific measures to support ITU activities and the initiatives of its three Sectors and regional offices in this area;

*b)* that Resolution 139 (Rev. Busan, 2014) of the Plenipotentiary Conference invites Member States to continue implementation of Resolution 37 (Rev. Dubai, 2014) of the World Telecommunication Development Conference on bridging the digital divide;

*c)* that Resolution 166 (Rev. Busan, 2014) of the Plenipotentiary Conference, on the number of vice-chairmen of Sector advisory groups and other groups, seeks to promote more effective participation of developing countries;

*d)* that Resolution 169 (Rev. Busan, 2014) of the Plenipotentiary Conference allowed the admission of the academia, universities and their associated research establishments from the developing countries to participate in the work of the three Sectors of the Union for 1/32 of the Sector Member contributory unit;

*e)* that Resolution 191 (Busan, 2014) of the Plenipotentiary Conference *instructs the Directors of the three Bureaux* to ensure coordination between the Sectors; *f)* that Resolution 195 (Busan, 2014) of the Plenipotentiary Conference *resolves to instruct the Director of the Telecommunication Development Bureau, in coordination with the Directors of the other Bureaux*,to provide technical expertise to carry out feasibility studies, projectmanagement and support for the implementation of the Smart AfricaManifesto;

*g)* that Resolution 197 (Busan, 2014) *instructs the Secretary-General, in consultation and collaboration with the Directors of the three Bureaux*, to facilitate the exchange of experiences and information with all relevant organizations and entities involved in IoT and IoT services, with the aim of creating opportunities for cooperative efforts to support the deployment of IoT,

recognizing

*a)* that the tasks undertaken in the ITU Telecommunication Standardization Sector (ITU‑T) cover Recommendations, conformity assessment and matters having policy or regulatory implications;

*b)* that the harmonious and balanced development of the worldwide telecommunication facilities and services is of mutual advantage to the developing as well as the developed countries;

*c)* that there is a need to reduce the cost of equipment and of rolling out networks and facilities taking into account the needs and requirements of developing countries;

*d)* that the disparity between developing and developed countries in standardization has five components: disparity of voluntary standardization, disparity of mandatory technical regulations, disparity of conformity assessment, disparity in human resources skilled in standardization and disparity in effective participation in ITU-T activities;

*e)* that it is of high importance for developing countries to increase their participation in the establishment and widespread use of telecommunication standards;

*f)* that, based on the findings of the ITU study on standardization capability of developing countries, there is a need to improve the coordination of information and communication technologies (ICT) standardization activities in many developing countries in order to improve their contribution in ITU-T study groups, and that the establishment of national standardization secretariats could enhance both the standardization activities at national level and the contribution in ITU-T study groups;

*g)* that the development of guidelines would enhance the participation of developing countries in ITU-T study groups,

recognizing also

*a)* that Decision 12 (Rev. Busan, 2014) of the Plenipotentiary Conference confirmed free-of-charge online access for the general public to ITU-T Recommendations, Recommendations of the ITU Radiocommunication Sector (ITU-R), ITU-R reports, the basic texts of the Union (Constitution, Convention and General Regulations of the conferences, assemblies and meetings of the Union), and the final acts of plenipotentiary conferences;

*b)* that annual reports presented at the ITU Council regarding policies of free on-line access to ITU publications indicate that said policies have been able to raise the level of awareness regarding standardization activities carried out at the ITU and to promote greater participation of developing countries in these activities;

*c)* that, under the strategic plan for the Union for 2016-2019, ITU-T is to work to "provide support and assistance to developing countries in bridging the standardization gap in relation with standardization matters, information and communication network infrastructure and applications, and relevant training materials for capacity building, taking into account the characteristics of the telecommunication environment of the developing countries",

noting

*a)* that while ITU has made significant progress in defining and bridging the standardization gap, the developing countries are still encountering multifarious difficulties in ensuring their efficient participation in the work of ITU-T, in particular engaging in and following up the work of the ITU-T study groups;

*b)* that the biennial budget structure now includes a separate expenditure line item for bridging the standardization gap activities, while at the same time voluntary contributions are being encouraged, and a management mechanism for this line item has been implemented by the Telecommunication Standardization Bureau (TSB) in close coordination with the Telecommunication Development Bureau (BDT);

*c)* the budgetary limitations, especially in developing-country institutions, for attendance at ITU-T events of specific interest to them;

*d)* that ITU's programmes for fostering partnerships, under the patronage of ITU‑T, continue to strengthen and expand the assistance ITU provides to its members, particularly developing countries;

*e)* the importance of having appropriate consultative frameworks for developing countries for the formulation and study of Questions, the preparation of contributions and capacity building;

*f)* that the organizational set-up and working methods of ITU-T Study Groups 2, 3, 5 and 12 could serve to improve the level of developing-country participation in standardization activities within some of the other study groups, especially SG 20, and contribute to achieving the objectives of Resolution 123 (Rev. Busan, 2014);

*g)* that joint meetings of regional groups of different ITU-T study groups, in particular if concatenated with a regional workshop and/or a meeting of a regional standardization body, will encourage the participation of developing countries in these meetings and increase the effectiveness of such meetings;

*h)* that the Telecommunication Standardization Advisory Group (TSAG) vice-chairmen, who are appointed on a regional representation basis, as well as study group vice-chairmen from developing countries, can be charged with specific responsibility, which can further enhance more active participation, especially of developing countries, in the standardization work of ITU-T;

*i)* that ITU can further improve both the quality and quantity of developing-country participation in standardization through the role of vice-chairmen and chairmen in mobilizing participation from their regions,

taking into account

*a)* the relevant conclusions of the Global Standardization Symposium;

*b)* that the actual participation by developing countries, where it exists, is usually limited to the final approval and implementation stages, rather than in the preparation of proposals prepared in the various working groups;

*c)* that coordination at national level in many developing countries to handle ICT standardization activities in order to contribute to work in ITU-T needs to be improved;

*d)* that TSAG agreed to create a mentor role in ITU-T study groups for coordination with representatives from developed and developing countries with the objective of sharing information and best practices with regard to the application of ITU-T Recommendations in order to enhance standardization activities in developing countries and in the regional groups,

recalling

that Resolution 1353 of the ITU Council recognizes that telecommunications and ICT are essential components for developed and developing countries for achieve sustainable development, and instructs the Secretary-General, in collaboration with the Directors of the Bureaux, to identify new activities to be undertaken by ITU to support the developing countries to achieve sustainable development through telecommunications and ICT,

resolves

1 that the action plan annexed to this resolution, having the objective of bridging the standardization gap between developed and developing countries, should be continued and be reviewed on an annual basis to take into account the requirements of developing countries;

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

i) assist developing countries in developing methods that facilitate the process of linking innovations to the standardization process;

ii) assist developing countries in developing means to align their national industrial and innovation strategies towards the goal of achieving highest impact on their socio-economic ecosystems;

iii) assist developing countries in establishing national/international test laboratories including systems for testing interworking, intercommunication and identification, especially for the Internet of things and its enablers;

3 to request the Director of TSB to strengthen cooperation and coordination with the relevant regional organizations, in particular those of the developing countries;

4 that, subject to Council approval, there should be free online access to the manuals, handbooks, directives and other ITU material related to understanding and implementation of ITU‑T Recommendations, particularly in the area of planning, operation and maintenance of telecommunications networks;

5 to support, within available or otherwise contributed resources, and on a case-by-case basis, the coordinated creation of regional groups of ITU-T study groups, and encourage cooperation and collaboration of these groups with other regional standardization entities;

6 to maintain in the annual budget of the Union a separate expenditure line item for bridging the standardization gap activities, while at the same time voluntary contributions should be further encouraged;

7 that the responsibilities of all vice-chairmen and chairmen from developing countries appointed to leadership positions in TSAG and in ITU‑T study groups include, among others:

i) closely work with ITU members in the region in order to mobilize them to participate in ITU standardization activities to assist in bridging the standardization gap;

ii) make mobilization and participation reports to the ITU body concerning the region;

iii) prepare and submit a mobilization programme for the regions that they represent at the first meeting of TSAG or a study group and send a report to TSAG,

further resolves that ITU regional offices

1 be engaged in the activities of TSB in order to promote and coordinate standardization activities in their regions to support the implementation of the relevant parts of this resolution and to carry out the objectives of the action plan, and launch campaigns to attract new Sector Members, Associates and Academia from developing countries to join ITU-T;

2 assist the vice-chairmen, within the offices' budgets, in mobilizing members within their respective regions for increased standardization participation;

3 organize and coordinate the activities of the regional groups of ITU-T study groups;

4 provide the necessary assistance to the regional groups of ITU-T study groups;

5 provide assistance to the regional telecommunication organizations for the setting-up and management of regional standardization bodies,

invites the Council

1 to increase the ITU-T budgetary provisions for fellowships, interpretation and translation of documents for meetings of TSAG, ITU-T study groups and regional groups of ITU-T study groups;

2 to encourage the establishment of a specialized panel for stimulating ICT innovations, under ITU-T, with the objective of enhancing global collaborative innovation in order to bridge the standardization gap between developed and developing countries and to identify and support innovations from developing countries;

3 to report, as appropriate, on this matter to the 2018 plenipotentiary conference;

4 to advise the 2018 plenipotentiary conference on its implementation of *invites the Council*,

instructs the Director of the Telecommunication Standardization Bureau, in collaboration with the Directors of Telecommunication Development Bureau and the Radiocommunication Bureau, within available resources

1 to continue implementing the objectives of the action plan annexed to this resolution;

2 to assist developing countries with their studies, particularly in respect of their priority questions and towards developing and implementing ITU-T Recommendations;

3 to continue the activities of the implementation group established within TSB to organize, mobilize resources, coordinate efforts and monitor work related to this resolution and the associated action plan;

4 to take the appropriate actions in respect of each new ITU-T Recommendation having implementation aspects, and consider the need for developing implementation guidelines;

5 to arrange for the drafting of a set of guidelines on the application of ITU Recommendations at national level, having regard to the provisions of Resolution 168 (Rev. Guadalajara, 2010) of the Plenipotentiary Conference;

6 to provide the support needed for regional mobilization for standardization;

7 to carry out the necessary studies on the role of innovation management and innovation stimulation programmes on bridging the standardization gap between the developed and developing countries;

8 to include in the TSB budget proposal to the ITU Council funds identified for the implementation of this resolution, taking into account financial constraints and existing and planned BDT activities;

9 to assist in institutionalizing the terms of reference, specified in *resolves* 7 abovein the working of TSAG and ITU-T study groups, so as to ensure that the specific responsibilities are made known to aspiring vice-chairmen before their appointment;

10 to report on the implementation of this plan to future world telecommunication standardization assemblies and plenipotentiary conferences, with a view to reviewing this resolution and introducing the appropriate amendments in the light of implementation outcomes, as well as the budgetary adjustments needed to implement this resolution;

11 to provide assistance to developing countries, if requested, in developing guidelines for use by the national entities of the requesting country in order to enhance their participation in ITU-T study groups, with the assistance of the ITU regional offices, for bridging the standardization gap;

12 to enhance use of electronic channels such as webinars or e-learning for education and training on implementation of ITU-T Recommendations;

13 to provide all necessary support for creating and ensuring the smooth functioning of the regional groups;

14 to take all necessary measures to facilitate the organization of meetings and workshops of the regional groups;

15 to report on the effectiveness of the regional groups to the ITU Council;

16 to conduct workshops and seminars, as appropriate, to disseminate information and increase understanding of new Recommendations, in particular for developing countries,

instructs ITU-T study groups and the Telecommunication Standardization Advisory Group

1 to be actively involved in the implementation of the programmes set forth in the action plan annexed to this resolution;

2 to coordinate joint meetings of regional groups of ITU-T study groups,

further instructs the study groups

1 to take account of the specific characteristics of the telecommunication environment of the developing countries in the process of establishing standards in the fields of planning, services, systems, operation, tariffs and maintenance, and to provide solutions/options relevant to developing countries wherever possible;

2 to take appropriate steps to have studies carried out on questions connected with standardization which are identified by world telecommunication development conferences;

3 to continue liaising with study groups of the ITU Telecommunication Development Sector, where appropriate, when developing new or revised ITU-T Recommendations, on the specific needs and requirements of developing countries, in order to broaden the appeal and applicability of the Recommendations in those countries,

invites the Director of the Telecommunication Standardization Bureau

1 to work closely with the Directors of BDT and the Radiocommunication Bureau (BR) in order to encourage the formation of partnerships under the patronage of ITU-T as one of the means for financing the action plan;

2 to consider, whenever possible, holding workshops concurrently with meetings of the ITU-T regional groups, in coordination and collaboration with the Director of BDT,

invites regions and their Member States

1 to pursue the creation of regional groups of parent ITU-T study groups in their respective regions in accordance with *resolves* 5 of this resolution and Resolution 54 (Rev. Dubai, 2012) of this assembly, and to support their meetings and activities, as appropriate, in coordination with TSB;

2 to take an active part in the activities of the ITU-T regional groups and support regional organizations in setting up regional frameworks for the development of standardization activities;

3 to create regional standardization bodies, as appropriate, and encourage joint and coordinated meetings of such bodies with the regional groups of the ITU-T study groups in the respective regions, so that these standardization bodies act as an umbrella for such regional group meetings;

4 to develop draft terms of reference and working methods for regional groups, which are to be approved by the parent study group,

encourages Member States and Sector Members

to take the objectives set out in the action plan in the annex to this resolution into account in their participation in ITU‑T.

Annex
(to Resolution 44)

Action plan for the implementation of Resolution 123 (Rev. Busan, 2014) of the Plenipotentiary Conference

# I Programme 1: Strengthening standard-making capabilities

1) Objective

• To improve the standard-making capabilities of developing countries.

2) Activities

• Developing guidelines to assist developing countries in their involvement in ITU‑T activities, covering, but not limited to, ITU-T working methods, formulating draft Questions and making proposals.

• Creating methods to increase the access of developing countries to essential technical information in order to enhance their knowledge and capacity (i) to implement global standards, (ii) to effectively contribute to the work of ITU-T, (iii) to include their own specificities and necessities in the global standard-making process, and (iv) to influence global standard-making discussions by having active roles in ITU-T study groups.

• Improving procedures and electronic tools for remote participation, in order to enable experts in developing countries to participate actively in ITU-T meetings (including TSAG, study groups, joint coordination activities, global standardization initiatives, among others), workshops and training, from their own countries.

• Conducting consultancy projects designed to support developing countries in the development of standardization plans, strategies, policies, etc. The outputs should be further transformed into best practices.

• Developing methods, tools and indicators for accurate measurement of the results and the level of effectiveness of the efforts and activities applied in bridging the standardization gap.

• Working with Sector Members, and in particular manufacturers, academia, and research and development organizations, on exchanging information on new technologies and requirements of developing countries, and on providing technical assistance to encourage the establishment of standardization programmes in academia and research and development organizations in the field of ICT.

# II Programme 2: Assisting developing countries with respect to the application of standards

1) Objective

• Assisting developing countries in:

• Ensuring that developing countries have a clear understanding of ITU‑T Recommendations.

• Enhancing the application of ITU‑T Recommendations in developing countries.

2) Activities

• To assist developing countries in:

• Establishing a standardization secretariat to coordinate standardization activities and participation in ITU-T study groups.

• Determining whether their existing national standards are consistent and in accordance with the current ITU‑T Recommendations.

• Actions to be performed by TSB with BDT cooperation:

• Developing a set of guidelines on how to apply ITU-T Recommendations, in particular on manufactured products and interconnection, with emphasis on Recommendations having regulatory and policy implications.

• Providing advice and assistance on how to better utilize and adopt ITU-T Recommendations in national standards.

• Compiling and maintaining a database containing information on new technologies that are standardized, as well as products that are compliant with ITU-T Recommendations.

• Organizing capacity-building events on the application of specific Recommendations and on methods of examining compliance of manufactured products with these Recommendations.

• Improving and promoting the use of an electronic forum for “questions and answers on standards” where developing countries can raise questions concerning their understanding and application of Recommendations and seek advice from study group experts;

• Providing consultation and assistance for establishing national/international test laboratories, including systems for testing interworking, intercommunication and identification, especially for IoT and its enablers.

# III Programme 3: Human resources capacity building

1) Objective

• To increase the human resources capacity of developing countries in ITU-T and national standardization activities.

2) Activities

• Promoting events, seminars, workshops and study group meetings at the regional and global levels to build capacities regarding matters relevant to standardization and the development of telecommunications and ICT in developing countries.

• In close collaboration with BDT and BR, providing training courses on standardization to developing countries.

• Providing more internship, secondment and short-term employment, etc., opportunities for developing countries at ITU.

• Encouraging the election of more candidates from developing countries to ITU‑T study groups chairmanship and vice-chairmanship positions.

• Encouraging secondment and short-term employment opportunities for experts from developing countries in test laboratories of international standards development organizations (SDOs) and manufacturers, in particular in the area of conformance and interoperability testing.

• Organizing in-depth tutorials on implementation of ITU-T Recommendations.

• Providing, through TSB, fellowships to eligible countries to attend relevant ITU-T meetings.

# IV Programme 4: Fundraising for bridging the standardization gap

*a)* Contributions to the action plan through the following forms of partnerships and other means:

• Partnership contributions

• Additional budget allocated by ITU

• Voluntary contributions by developed countries

• Voluntary contributions by the private sector

• Voluntary contributions by others.

*b)* Management of funds by TSB:

• The Director of TSB, in close coordination with the Director of BDT, shall be responsible for the management of funds raised as above, which shall be used principally for achieving the objectives of these programmes.

*c)* Principles for the use of funds:

• Funds are to be used for ITU‑related activities including, but not limited to, assistance and consultation, training of representatives of developing countries in ITU-T activities, as well as studying compliance examination, interconnection and interoperability programmes for developing countries (but not for the purchase of equipment).

1. 1 These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition. [↑](#footnote-ref-1)