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| **Council 2017 Geneva, 15-25 May 2017** |  |
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| **Agenda item: PL 1.4** | **Document C17/33-E** |
| **14 March 2017** |
| **Original: English** |
| Report by the Secretary-General | |
| ITU INTERNET ACTIVITIES: RESOLUTIONS 101, 102, 133 AND 180 | |

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| Summary  This report summarizes ITU’s activities since Council 2016 related to Plenipotentiary Conference (PP) Resolution 101 (Rev. Busan, 2014), “Internet Protocol-based networks”; Resolution 102 (Rev. Busan, 2014), “ITU’s role with regard to international public policy issues pertaining to the Internet and the management of Internet resources, including domain names and addresses”; Resolution 133 (Rev. Busan, 2014), “Roles of administrations of Member States in the management of Internationalized (multilingual) domain names”; and Resolution 180 (Rev. Busan, 2014), “Facilitating the transition from IPv4 to IPv6”.  Action required  The Council is invited to **note** the report. The Council is also invited to **endorse** the transmission of the report, along with the compilation of views of Council Member States and the related summary records with a cover note, to the United Nations Secretary-General.  \_\_\_\_\_\_\_\_\_\_\_\_  References  *Plenipotentiary Resolutions* [*101*](http://www.itu.int/en/action/internet/Documents/Resolution_101_pp14.pdf)*,* [*102*](http://www.itu.int/en/action/internet/Documents/Resolution_102_pp14.pdf)*,* [*133*](http://www.itu.int/en/action/internet/Documents/Resolution_133_pp14.pdf)*,* [*180*](http://www.itu.int/en/action/internet/Documents/Resolution_180_pp14.pdf) *(Rev. Busan, 2014); Council Resolutions* [*1305*](http://www.itu.int/md/S09-CL-C-0105) *(2009),* [*1336*](http://www.itu.int/md/S15-CL-C-0113/en) *(mod 2015),* [*1344*](http://www.itu.int/md/S15-CL-C-0112/en) *(mod 2015); WTSA Resolutions* [*47*](https://www.itu.int/pub/T-RES-T.47-2016)*,* [*48*](https://www.itu.int/pub/T-RES-T.48-2016) *(Rev. Dubai, 2012)* [*49*](https://www.itu.int/pub/publications.aspx?lang=en&parent=T-RES-T.49-2016)*,* [*50*](https://www.itu.int/pub/T-RES-T.50-2016)*,* [*52*](https://www.itu.int/pub/T-RES-T.52-2016) *(Rev. Hammamet, 2016),* [*58*](https://www.itu.int/pub/T-RES-T.58-2016)*,* [*60*](https://www.itu.int/pub/T-RES-T.60-2016) *(Rev. Dubai, 2012),* [*64*](https://www.itu.int/pub/T-RES-T.64-2016)*,* [*69*](https://www.itu.int/pub/T-RES-T.69-2016)*,* [*75*](https://www.itu.int/pub/T-RES-T.75-2016) *(Rev. Hammamet, 2016),* [*98*](https://www.itu.int/pub/T-RES-T.98-2016) *(Hammamet, 2016);* [*WTDC-14/Dubai Action Plan Objective 4*](https://www.itu.int/en/ITU-D/TIES_Protected/WTDC14/WTDC14-FinalReport-E.pdf)*, WTDC Resolutions* [*20*](http://www.itu.int/en/action/internet/Documents/Resolution_20_wtdc10.pdf) *(Rev. Hyderabad, 2010),* [*30*](http://www.itu.int/en/action/internet/Documents/Resolution_30_wtdc14.pdf)*,* [*45*](http://www.itu.int/en/action/internet/Documents/Resolution_45_wtdc14.pdf) and [*63*](http://www.itu.int/en/action/internet/Documents/Resolution_63_wtdc14.pdf) *(Rev. Dubai, 2014); Council Documents* [*C99/51*](http://www.itu.int/itudoc/gs/council/c99/docs/docs1/051.html)*,* [*C2000/27*](http://www.itu.int/itudoc/gs/council/c00/docs/27.html)*,* [*C2000/27Add.A*](http://www.itu.int/itudoc/gs/council/c00/docs/27a.html)*,* [*C2000/27Add.B*](http://www.itu.int/itudoc/gs/council/c00/docs/27b.html)*,* [*C01/EP/8*](http://www.itu.int/itudoc/gs/council/c01/docs/ep/008.html)*,* [*C02/46*](http://www.itu.int/md/S02-CL-C-0046/en)*,* [*C03/27*](http://www.itu.int/md/S03-CL-C-0027/en)*,* [*C04/28*](http://www.itu.int/md/S04-CL-C-0028/en)*,* [*C05/32*](http://www.itu.int/md/S05-CL-C-0032/en)*,* [*C05/INF/10*](http://www.itu.int/md/S05-CL-INF-0010/en)*,* [*C06/4*](http://www.itu.int/md/S06-CL-C-0004/en)*,* [*C07/42*](http://www.itu.int/md/S07-CL-C-0042/en)*,* [*C08/32(Rev.1)*](http://www.itu.int/md/S08-CL-C-0032/en)*,* [*C09/49*](http://www.itu.int/md/S09-CL-C-0049/en), [*C10/13*](http://www.itu.int/md/S10-CL-C-0013/en), [*C11/31*](http://www.itu.int/md/S11-CL-C-0031/en)*,* [*C12/28*](http://www.itu.int/md/S12-CL-C-0028/en)*,* [*C13/62*](http://www.itu.int/md/S13-CL-C-0062/en)*,* [*C14/40*](http://www.itu.int/md/S14-CL-C-0040/en)*,* [*C15/33*](http://www.itu.int/md/S15-CL-C-0033/en)*,*and [*C16/33*](http://www.itu.int/md/S16-CL-C-0033/en)*.* |

# 1. Introduction

This report describes ITU’s activities related to the Plenipotentiary Conference Resolutions 101, 102, 133, and 180 since Council 2016.

# 2. Activities related to Internet Protocol (IP) networks, the development of next-generation networks (NGN) and future Internet, including policy and regulatory challenges

2.1 All ITU-T study groups continue their work in different areas of NGNs and their evolution, and future network (FN) Recommendations. As of 8 February 2017, 230 new/revised ITU-T Recommendations were approved since 1 June 2016 (see detailed list [here](http://www.itu.int/ITU-T/workprog/wp_search.aspx?isn_sp=1749&isn_status=-1,2&adf=2016-06-01&adt=2016-12-13&details=0&field=acdefghijo)), including revised Recommendation [ITU-T D.271](http://www.itu.int/md/T13-SG03-R-0019/en) on “Charging and accounting principles for NGN” from ITU-T SG3 approved by WTSA-16.

2.2 ITU-T Focus Group on IMT-2020 (FG IMT-2020) concluded its preliminary study into the networking innovations required to achieve the ambitious performance targets of smart 5G systems with five draft ITU international standards (Requirements of IMT-2020 from network perspective; Framework for IMT-2020 network architecture; Requirements of IMT-2020 fixed mobile convergence; IMT-2020 network management requirements; and Network management framework for IMT-2020) and four draft ITU technical reports (Application of network softwarization to IMT-2020; Unified network integrated cloud for fixed mobile convergence; Application of information centric networking to IMT-2020; and Terms and definitions for IMT-2020 in ITU-T) to be adopted by its parent group, ITU-T SG13.

2.3 ITU-T SG20 has approved three Recommendations on IoT, namely: ITU-T Y.4113 “Requirements of the network for the Internet of Things”, ITU-T Y.4451 “Framework of constrained device networking in the IoT environments”, and ITU-T Y.4453 “Adaptive software framework for IoT devices”.

2.4 ITU-T SG12 approved new Recommendation ITU-T Y.1545.1 “Framework for monitoring the QoS of Internet Protocol (IP) network services”. SG12 has completed a family of video quality monitoring standards in the ITU-T P.1200 Recommendations series, which form a complete model to predict the impacts on end-user experience resulting from audio and video encodings and observed IP network impairments.

2.5 ITU-T SG11 approved new Recommendation ITU-T Q.3960 on “Framework for Internet related performance measurements”.

2.6 The World Telecommunication Standardization Assembly (WTSA-16) was held from 25 October to 3 November 2016 in Hammamet, Tunisia. WTSA-16 suppressed six WTSA-12 Resolutions, retained 14 WTSA-12 Resolutions unchanged, revised 31 WTSA-12 Resolutions and adopted 16 new Resolutions; see also document [C17/52](https://www.itu.int/md/S17-CL-C-0052/en). With respect to Internet-related WTSA-12 Resolutions, WTSA-16 kept them largely unchanged, e.g. no changes were made to WTSA-12 Res. 47 (“Country code top-level domain names”), Res. 48 (“Internationalized (multilingual) domain names”) and Res. 58 (“Encouraging the creation of national computer incident response teams, particularly for developing countries”); only editorial changes were made to WTSA-12 Res. 49 (“ENUM”) and Res. 69 (“Non-discriminatory access and use of Internet resources”); some updates were made to WTSA-12 Res. 64 (“IP address allocation and facilitating the transition to and deployment of IPv6”), as indicated in section 3 below; and new WTSA-16 Res. 98 (“Enhancing the standardization of Internet of things and smart cities and communities for global development”) was adopted. WTSA-12 Res. 75 (“The ITU Telecommunication Standardization Sector’s contribution in implementing the outcomes of the World Summit on the Information, taking into account the 2030 Agenda for Sustainable Development”) was further amended to additionally take into account the Sustainable Development Goals (SDGs).

2.7 ITU-T SG3 revised Recommendation ITU-T D.271 on “Charging and accounting principles for NGN”, which was approved by WTSA-16.

2.8 ITU-T SG3 developed a study on the “Economic impact of OTTs”, which will be used as the baseline text for an ITU-T technical report. A base text for a new draft Recommendation on the economic impact of OTTs was also prepared.

2.9 ITU-T SG13 developed two new Recommendations on deep packet inspection, ITU-T Y.2772 “Mechanisms for the network elements with support of deep packet inspection” and draft ITU-T Y.2773 “Performance models and metrics for deep packet inspection” (currently under approval).

2.10 ITU-T SG13 approved three new Recommendations: ITU-T Y.2085 “Distributed service networking service routing”, ITU-T Y.2330 “Requirements of Next Generation Network evolution for supporting free-data service”, and ITU-T Y.2340 “Overview of Next Generation Network evolution phase 1”. Four draft Recommendations on trusted cloud computing and future & NGN networks were agreed upon at the February 2017 SG13 meeting: Y.3051 “The basic principles of a trusted environment in ICT infrastructure”, Y.3052 on “Overview of trust provisioning for ICT infrastructures and services”, Y.2304 on “Network intelligence capability enhancement – Requirements and capabilities to support mobile content delivery optimization”, and Y.2341 on “Next Generation Network evolution – Requirements for supporting authorized account messaging service”.

2.11 ITU-T SG16 has finalized two new draft Recommendations (currently under approval): ITU-T H.763.2 “Scalable vector graphics for IPTV services” and ITU-T T.621 “File structure for interactive mobile comic and animation content”.

2.12 ITU-D SG1 and SG2 continue to address IP-related issues such as NGN Interconnection, VoIP, Access technology for broadband telecommunications including International Mobile Telecommunications (IMT), and migration strategies from existing networks to NGNs for developing countries.

2.13 ITU-T received two new incident reports regarding potential cases of discriminatory access and use of Internet resources (see all related [reports](https://www.itu.int/net/ITU-T/res69/secured/notifications.aspx) on the specific website for [WTSA Resolution 69](https://www.itu.int/net/ITU-T/res69/Default.aspx)). TSB has not received feedback to any reported incidents (so far there have been 37 since 2009).

2.14 ITU-D continues implementing Internet broadband wireless connectivity and developing ICT applications to provide free or low cost digital access for schools and hospitals, and for underserved populations in rural and remote areas in selected countries (Burundi, Burkina Faso, Djibouti, Lesotho, Mali, Swaziland, etc.).

2.15 ITU-R approved Recommendation ITU-R M.2083 “IMT Vision – Framework and overall objectives of the future development of IMT for 2020 and beyond”, and Resolutions ITU-R 65 “Principles for the process of future development of IMT for 2020 and beyond” and ITU-R 66 “Studies related to wireless systems and applications for the development of the Internet of Things”.

2.16 ITU continues its cooperation with the Corporation for National Research Initiatives (CNRI) and the DONA Foundation on the use of the Digital Object Architecture (DOA) – an advanced architecture for information management – in the use of its advanced digital object management features in ITU and interested UN agencies.

# 3. IPv6

3.1 WTSA-16 updated Resolution 64 with, *inter alia*, new additional requirement for the TSB Director “*to support BDT in relevant IPv6 training for engineers, network operators and content providers that can enhance their skills and which they can further apply at their respective organizations*”.

3.1.1 ITU-T SG2 and SG3 continue to study the methodology and work items needed for the implementation of the relevant parts of WTSA Res. 64.

3.2 Work continues on the ITU IPTV IPv6 Global Testbed ([I3GT](http://www.itu.int/en/ITU-T/C-I/interop/I3GT/Pages/default.aspx)) project among ITU members with the support of ITU secretariat to test various aspects of ITU-T’s IPTV standards, train academia on up-to-date IPTV technologies, showcase standardized IPTV to stakeholders, and also to promote IPv6 capability deployment in developing countries.

3.3 BDT continues to provide assistance to countries on the implementation of IPv6 policies and IPv6 test bed as requested by Member States, e.g. IPv6 test bed for Central Africa; IPv6 training workshop for Eastern and Southern Africa; Supporting IPv6 implementation in Asia-Pacific region (i.e. technical support was provided to Cambodia in September 2016 for the transition from IPv4 to IPv6).

3.4 In partnership with APNIC, ITU-D and the Ministry of Digital Economy and Society of Thailand will organize the ITU Asia-Pacific Centre of Excellence (ITU ASP CoE) Programme on [“Internet and IPv6 Infrastructure Security”](https://academy.itu.int/index.php?option=com_joomdle&view=coursecategoryextended&cat_id=:&course_id=1115:internet-and-ipv6-infrastructure-security&Itemid=478&lang=en) for the Asia-Pacific Region, from 8 to 12 May 2017 in Nonthaburi, Thailand, supported by TOT Academy. This training is part of the Broadband Access programme under the auspices of the ITU ASP CoE.

# 4. Internet-related public policy issues including the management of domain names and addresses

4.1 The [Council Working Group on international Internet-related public policy issues (CWG-Internet)](http://www.itu.int/council/groups/CWG-internet/index.html) held two meetings, on 13-14 October 2016 and on 6-7 February 2017. It further conducted two rounds of online Open Consultations: a) from February to September 2016 on “Building an enabling environment for access to the Internet”, followed by a physical open consultation meeting on 11 October 2016; b) from October 2016 to January 2017 on the “Developmental Aspects of the Internet”, followed by a physical open consultation meeting on 3 February 2017.

4.2 ITU participated in the two meetings of the re-established CSTD Working Group on Enhanced Cooperation (WGEC), on 30 September 2016 and on 26-27 January 2017.

4.3 ITU continues to follow the issue of protecting intergovernmental organization (IGO) names and acronyms in any new gTLDs, as part of the IGO coalition composed of approximately 35 IGOs including OECD, UN, UPU, WHO, WIPO, and the World Bank. In June 2016, in coordination with the executive heads of IGOs, the Secretary-General of the United Nations sent a letter to the Foreign Ministers of all 193 Member States of the Organization, asking for their assistance with respect to the protection of IGO names and acronyms on the Domain Name System. The ITU Secretary-General also joined this executive coalition and supported the Secretary-General of the United Nations on this important matter.

4.4 ITU-T SG2 continues to follow the issue of possible perceived mapping of the ITU-T E.164 numbering plan into the DNS, with regard to the provision of all-numeric domain names by TELNIC, the domain name registry operator for .tel gTLD. ITU-T SG2 is awaiting contributions from ITU-T membership after a call for contribution was made on this topic in its January 2016 meeting.

# 5. ENUM

[Updated Information on ENUM](http://www.itu.int/ITU-T/inr/enum/) is being maintained by ITU-T. This includes information on approved ENUM Delegations and on ENUM trials.

# 6. International Internet Connectivity (IIC)/Internet Exchange Points (IXPs)

6.1 BDT continues to provide assistance to countries on the creation of national IXPs, and on achieving efficient and cost-effective regional Internet connectivity by, e.g.: developing model interconnection as a basis for formulating National and Regional IXPs; supporting strengthening capabilities of the national IXPs (Montenegro) and the National Internet Exchange in Timor Leste; developing a new publication on “Internet Exchanges” including Renewable Energies for Rural Communications, etc.

6.2 BDT organized the [“IV Regional Forum on Inter-connectivity & Reduction of telecommunication service prices and Internet access cost”](http://www.itu.int/en/ITU-D/Regional-Presence/Americas/Pages/EVENTS/2016/15549.aspx) on 11-12 August 2016 in Tegucigalpa, Honduras, where case studies of national IXP implementation in the Region were discussed, including related benefits and future projects.

6.3 ITU-T SG3 Recommendation [ITU-T D.52](http://www.itu.int/md/meetingdoc.asp?lang=en&parent=T13-SG03-R-0017) on “Establishing and connecting Regional IXPs to reduce costs of international Internet connectivity” was approved by WTSA-16.

6.4 ITU-T SG3 continues to work on IIC, including IP peering, regional traffic exchange points, cost models, and cost of provision of services.

**7. Internet Governance Forum (IGF)**

ITU participated in the 11th IGF meeting held on 5-9 December 2016 in Guadalajara, Mexico. ITU co-organized three Open Forums: a) with [UN Women](http://sched.co/8hv4) on the empowering effect of the use of technology by women, showcasing the “EQUALS” Global Partnership for Gender Equality in the Digital Age; b) with [UNESCO](http://sched.co/8huE) on “How can universal connectivity be used as a catalyst for achieving the SDGs?”, elaborating on the work of the Broadband Commission and how this fits into the UN efforts towards the implementation of the SDGs; and c) with other [WSIS Action Line facilitators](http://sched.co/8hv7) on the WSIS Action Lines supporting the implementation of the SDGs through national, regional and global perspectives. ITU Deputy Secretary-General represented ITU at the IGF 2016 Zero Day High-Level Meeting themed “Achieving social inclusion: A common goal for the Internet community” and the IGF 2016 Opening Ceremony/Session. ITU further participated as a speaker in some 11 sessions organized by various stakeholders.

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