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| **Council Working Group on International Internet Related Public Policy issues (CWG-Internet) Eleventh meeting – Geneva, 25-26 January 2018** |  |
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|  | **Document WG-Internet 11/2-E** |
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| Report by the Secretary-General  ITU INTERNET ACTIVITIES: RESOLUTIONS 101, 102, 133 & 180 | |
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| Summary  This report summarizes ITU’s activities 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”.  \_\_\_\_\_\_\_\_\_\_\_\_  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);* [WTDC17/Buenos Aires Action Plan Objective 3/Output 3.3](https://www.itu.int/md/D14-WTDC17-C-0115/en) *, WTDC Resolutions* [*20, 30 , 63 (Rev. Buenos Aires, 2017*](https://www.itu.int/md/D14-WTDC17-C-0115/en)*), and* [*45*](http://www.itu.int/en/action/internet/Documents/Resolution_45_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)*,*[*C16/33*](http://www.itu.int/md/S16-CL-C-0033/en)*,* [*C17/33*](https://www.itu.int/md/S17-CL-C-0033/en)*.* |

# 1. Introduction

This report describes ITU’s activities related to the Plenipotentiary Conference Resolutions 101, 102, 133, and 180 for the reporting period from Council 2017 till date.

# 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 Internet, IPv4/IPv6-based networks, Internet-of-things, Internet naming and addressing, NGNs and their evolution, future network (FN), cloud computing, QoS, IPTV, and IP-based applications, uncertainty of origin, and international connectivity.

As of 24 November 2017, more than 100 new/revised ITU-T Recommendations and other texts were approved since 31 July 2017 (see detailed list [here](https://www.itu.int/ITU-T/workprog/wp_search.aspx?isn_sp=3925&isn_status=-1,2&adf=2017-08-01&adt=2017-12-31&details=0&field=acdefghijo)).

**2.2** Coordination through liaisons occurred between ISO/IEC JTC 1/SC6 and ITU-T SG11 on edge computing and managed P2P communications, and between oneM2M and ITU-T SG20 on oneM2M.

**2.3** The new ITU-T JCA-IMT2020 started its coordination activity on 5G/IMT-2020 among participating ITU-T Study Groups 5, 11, 13, 15, 20, BBF, and IEEE. The JCA will continue to maintain the IMT-2020 roadmap document with expected inputs from external organizations.

**2.4** ITU-T SG3, under its Question 9/3 on the economic and regulatory impact of the Internet, convergence (services or infrastructure) and new services, such as over the top (OTT), on international telecommunication services and networks, has agreed on a [Technical Report](https://www.itu.int/dms_pub/itu-t/opb/tut/T-TUT-ECOPO-2017-PDF-E.pdf) on the Economic Impact of OTTs. The report seeks to provide technical and policy background to the international community in both developed and developing countries as to the nature and implications of OTT and related online services.

**2.5** ITU-T SG9 has approved one draft Recommendation: ITU-T J.1020 “Service model and architecture of downloadable mobile multi-CA/DRM solutions for delivering CA/DRM client software to secondary device” provides a reference service model, architecture, and service operation protocols which are needed for multi-Conditional Access (CA)/Digital Rights Management (DRM) based on downloadable scheme. The downloadable scheme means downloading CA/DRM client software images from Multichannel Video Programming Distributor (MVPD) or broadcaster to user’s mobile terminal such as smart phone, tablet, and laptop PC. Service providers can change CA/DRM solutions for mobile device from one to the other using on-line method as well as operate multiple CA/DRM solutions at the same time.

**2.6** ITU-T SG11 approved one Recommendation: ITU-T X.609.3 “Managed P2P communications: Multimedia streaming signalling requirements” specifies signalling requirements for distributed multimedia streaming over managed P2P architecture, and also describes high-level procedures for multimedia streaming services over managed P2P architecture, and roles of managed P2P components.

**2.6.1** ITU-T SG11 finalized eight draft Recommendations:

ITU-T Q.3640 “Framework of interconnection of VoLTE/ViLTE-based networks” (under approval) which specifies the high-level framework of interconnection of LTE-based networks for providing interoperable voice and video services.

ITU-T Q.3715 “Signalling requirements for dynamic bandwidth adjustment on demand on broadband network gateway implemented by software defined networking technologies” (under approval) describes the architecture and signalling requirements for dynamic bandwidth adjustment on demand on broadband network gateway implemented by software defined networking technologies.

ITU-T Q.3914 “Set of parameters of cloud computing for monitoring” (under approval) gives a functional reference architecture of cloud computing according to ITU-T Y.3500. This Recommendation provides a set of parameters that indicate the status and event of a cloud computing system, including resource layer, service layer and access layer.

Revised ITU-T Q.3940 “NGN/IMS interconnection tests between network operators at the IMS 'Ic' interface and NGN NNI/SIP-I”, developed in cooperation with ETSI, defines the tests purposes (TPs) for next generation network (NGN) IP multimedia subsystem (IMS) interconnection tests between national and international network operators, covered by ITU International Telecommunication Regulations, at the IMS interconnection (Ic) interface and NGN network-to-network interface (NNI)/SIP-I.

ITU-T Q.3952 (under approval) “The architecture and facilities of Model network for IoT testing” describes the architecture and facilities of Model Network for IoT testing.

Revised ITU-T Q.4016 “Testing specification of call establishment procedures based on SIP/SDP and ITU-T H.248 for a real-time fax over IP service” contains the testing specification of call establishment procedures based on SIP/SDP and H.248 for a real-time fax over IP service.

ITU-T Q.4041.1 “Cloud computing infrastructure capabilities interoperability testing – part 1: Interoperability testing between CSC and CSP” specifies the cloud computing infrastructure capabilities type interoperability testing between CSC and CSP, including interoperability testing of computing service, storage service, network service and related management functions based on the functional requirements specified in ITU-T Y.3513.

ITU-T X.609.4 “Managed P2P communications: Multimedia streaming peer protocol” and X.609.5 “Managed P2P communications: Multimedia streaming overlay management protocol” (both under approval) specify a peer protocol for distributed multimedia streaming services over managed P2P architecture, and a corresponding overlay network management protocol.

**2.7** ITU-T SG13 created a new [ITU Focus Group on Machine Learning for Future Networks including 5G](http://www.itu.int/en/ITU-T/focusgroups/ml5g/Pages/default.aspx) (FG-ML5G) which will establish a basis for ITU standardization to assist machine learning in bringing more automation and intelligence to ICT network design and management. An intensive one-year investigation will lead into where technical standardization could support emerging applications of machine learning in fields such as big data analytics, network management and orchestration, and security and data protection. An analysis of emerging use cases will inform the Focus Group’s development of technical specifications to meet the requirements of such use cases with respect to network architectures, interfaces, protocols, algorithms and data formats. The Focus Group will consider machine-learning methods’ compatibility with a wide variety of fixed and mobile communication stacks, encouraging the development of methods attuned to the operational requirements of the networking industry, with interoperability as a priority. The Focus Group will propose means to train, adapt, compress and exchange machine-learning algorithms. This work will promote the emergence of an ecosystem able to support the interaction of multiple machine-learning algorithms.

**2.7.1** ITU-T SG13 approved nine Recommendations and finalized eight draft Recommendations (under approval):

ITU-T Y.2255 “Voice and Video Call Continuity over LTE, Wi-Fi and 2G/3G” specifies the voice and video call continuity (VCC) over LTE, Wi-Fi and 2G/3G.

ITU-T Y.2322 “The functional architecture of VCNMO (Virtualized Control Network entities Management and Orchestrator) in NGN evolution” focuses on the functions, functional entities and reference points of VCNMO (Virtualized Control Network entities Management and Orchestrator) and its subcomponents in the architecture of VCN.

ITU-T Y.2618 “M interface in Public packet Telecommunication Data Network (PTDN)” defines the reference point M interface in the Public packet Telecommunication Data Network (PTDN), and specifies common PTDN management functions and protocols, and defines specific PTDN management functions related to VPN and multicast service.

ITU-T Y.2774 “Functional requirements of deep packet inspection for future networks” specifies the functional requirements of deep packet inspection for future networks (i.e., software defined network, network function virtualization etc.).

ITU-T Y.3053 “Framework of trustworthy networking with trust-centric network domains” describes a trustworthy networking conceptual model that includes features of identification, trust evaluation and trustworthy communication, with specified high-level and functional requirements, a functional architecture, and scalability of trustworthy networking with trust-centric network domains.

ITU-T Y.3101 “Requirements of the IMT-2020 network” describes general principles and requirements of overall non-radio aspects of the IMT-2020 network.

ITU-T Y.3130 “Requirements of IMT-2020 fixed mobile convergence” specifies service related requirements as unified user identity, unified charging, service continuity and guaranteed quality of service support, and network capability requirements as control plane convergence, user data management, capability exposure and cloud based infrastructure, to support fixed mobile convergence in IMT-2020 network.

ITU-T Y.3150 “High level technical characteristics of network softwarization for IMT-2020” describes how network softwarization and network slicing contribute to IMT-2020 systems. It explores network slicing from two viewpoints: vertical and horizontal aspects. The Recommendation further describes network slicing for mobile fronthaul/backhaul, introduction to advanced data-plane programmability, and capability exposure. These technical characteristic descriptions are expected to lead to their detailed study.

**2.8** ITU-T SG15 is active on various activities with many approved Recommendations in support of the Internet, such as xDSL access networks, Ethernet and MPLS transport networks, synchronization in transport networks, optical transport networks, and home networks. A number of related activities are currently in progress.

**2.9** ITU-T SG16 finalized four draft Recommendations:

Draft Recommendation ITU-T F.746.4 “Requirements for deployment of information centric networks” (under approval) describes the scenarios and requirements for deployment of information centric networks (ICN).

Draft Recommendation ITU-T F.746.6 “Requirements for a name resolution service in information-centric networks” (under approval) describes the requirements for a flexible name resolution service and the capabilities of the name resolution service in information-centric networks (ICN). This name resolution service can flexibly support name resolution for any particular ICN instance and facilitate interoperation between different ICN instances with their own namespaces.

Draft Recommendation ITU-T H.724 “IPTV Terminal Device: Interworking-enabled model of multiple devices” (under approval) describes the functional components and features that enable interworking between the IPTV terminal devices defined in ITU-T Recommendations H.721, H.722 and H.723.

Draft Recommendation H.763.3 “HTML for IPTV services” (under approval) describes hypertext markup language to provide interoperability and harmonization among IPTV multimedia application frameworks.

**2.10** ITU-T SG17 established a new Question 14/17 on security aspects of distributed ledger technologies and approved new Recommendations: X.1040 ‘Security reference architecture for lifecycle management of e-commerce business data’, X.1053 ‘Code of practice for information security controls based on ITU-T X.1051 for small and medium-sized telecommunication organizations’, X.1146 ‘Security protection guidelines for value-added services provided by telecommunication operators’, X.1213 ‘Security Capability Requirements for Countering Smartphone-based Botnets’, X.1248 ‘Technical Requirements for Countering Instant Messaging Spam (SPIM)’ and revised X.1541 ‘Incident Object Description Exchange Format (version 2)’.

**2.10.1** ITU-T SG17 started approval of three new Recommendations - X.1214 ‘Security assessment techniques in telecommunication/ICT networks’, X.1331 ‘Security guidelines for Home Area Network (HAN) devices in Smart Grid systems’ and X.1603 ‘Data security requirements for the monitoring service of cloud computing’.

**2.11** ITU-T SG20 approved six Recommendations:

ITU-T Y.4101/Y.2067 “Common requirements and capabilities of a gateway for Internet of Things applications” provides the common requirements and capabilities of a gateway for Internet of things (IoT) applications. The provided common requirements and capabilities are intended to be generally applicable in gateway application scenarios.

ITU-T Y.4115 “Reference architecture for IoT device capabilities exposure” clarifies the concept of the IoT device capability exposure (DCE), identifies its general characteristics and common requirements and provides relevant reference architecture and common procedures.

ITU-T Y.4116 “Requirements of transportation safety service including use cases and service scenarios” describes requirements for providing transportation safety services.

ITU-T Y.4117 “Requirements and capabilities of Internet of Things for support of wearable devices and related services” describe characteristics, specific requirements and capabilities of IoTs for support of wearable devices and related services.

ITU-T Y.4455 “Reference architecture for IoT network service capability exposure” introduces IoT network capability exposure (IoT NCE). This Recommendation clarifies the concept of the IoT NCE, identifies its general characteristics and common requirements, and provides the reference architecture and relevant capabilities for the IoT NCE. Additionally, it provides several use cases and common procedures to illustrate the concept and the architecture of the IoT NCE.

ITU-T Y.4806 “Security capabilities supporting safety of the Internet of Things” provides a classification of the security issues for the IoTs and examines how the security threats may affect safety, in order to determine which security capabilities specified in Recommendation ITU-T Y.4401/Y.2068 support safe execution of the IoTs.

Draft Recommendation ITU-T Y.4500.1 “oneM2M- Functional Architecture“ (under approval) harmonizes and specifies the end-to-end oneM2M functional architecture in the M2M Service Layer.

**2.12** The new ITU-T Focus Group on “Data Processing and Management (DPM) to support IoT and Smart Cities & Communities” (FG DPM) progressed its work during the second meeting, which took place on 20-25 October 2017, in Geneva, Switzerland.

**2.13** The United for Smart Sustainable Cities (U4SSC) initiative is currently working on the following deliverables: Guidelines on tools and mechanisms to finance SSC projects; Guidelines on strategies for circular cities; City science application framework; Guiding principles for artificial intelligence in cities; Blockchain 4 cities and Toolkit for Smart Sustainable Cities.

**2.14** The final ITU-D Study Group 1 and Study Group 2 meetings for the [2014-2017 study period](http://www.itu.int/itu-d/study-groups) in March and April 2017 agreed to the final reports containing the deliverables called for by WTDC-14 for the study Questions. The study Questions in ITU-D SG1 and SG2 have addressed IP-related issues such as NGN interconnection, IPv4 to IPv6 migration, VoIP, access technology for broadband telecommunications including International Mobile Telecommunications (IMT), solutions for rural and remote areas, migration strategies from existing networks to NGNs for developing countries and applications in the smart society, among others. The ITU-D Study Groups will continue their work on study topics and questions as decided by WTDC-17 in Argentina in October 2017.

**2.14.1** The final report in response to ITU-D SG1 Question 1/1: “Policy, regulatory and technical aspects of the migration from existing networks to broadband networks in developing countries, including next-generation networks, m-services, OTT services and the implementation of IPv6” shares finding on experiences of Member States aimed at enabling the full potential of the digital economy. The benefits that OTTs are bringing to those who are connected, m-services, m-payments, and the experiences of countries in transitioning from IPv4 to IPv6, among others, are explored through case studies in the report.

**2.14.2** The final report in response to ITU-D SG1 Question 2/1: “Broadband access technologies, including IMT, for developing countries” highlights some factors influencing the effective deployment of all broadband access technologies.

**2.14.3**  The final report in response to ITU-D SG1 Question 3/1: “Access to cloud computing: challenges and opportunities for developing countries” considers the cloud as the engine for digital transformation.

**2.14.4** The final report in response to ITU-D SG1 Question 4/1: “Economic policies and methods of determining the costs of services related to national telecommunication/ICT networks, including next-generation networks” considers how the price of telecommunication/ICT have evolved over time, the link between costs and pricing, and what National Regulatory Authorities (NRAs) can do to ensure fair telecommunication/ICT service prices for all.

**2.14.5** The final report in response to ITU-D SG1 Question 5/1: “Telecommunications/ICTs for rural and remote areas” gathers experiences related to the opportunities and challenges as well as services and applications adapted to the needs of users in rural and remote areas.

**2.14.6** The final report in response to ITU-D SG2 Question 1/2: “Creating the smart society: Social and economic development through ICT applications” looks at key elements that are required to leverage what ICTs can do to enable a smart society while ensuring sustainable development.

**2.15** TSB has not received feedback concerning any reported incidents (so far there have been 37 since 2009, 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)).

**2.16** 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.).

**2.17** 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”.

**2.18** 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.

**2.19** Several trainings were provided through ITU Academy and the ITU Centers of Excellence network, covering the following topics: “Training on IPv6 deployment”, “Strategic Aspects for Internet Governance and Innovations”, “Technologies of 4 Generation LTE and LTE Advanced”, “Technologies of Optical Access on Next Generation Networks”, “ICT Infrastructure and IoT”, “The future of Interface towards 5G” and “ICT and Smart Sustainable Cities”.

# 3. IPv6

**3.1** 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. ITU-T SG20 is working on the following draft ITU-T Recommendations: “Reference Model of IPv6 Subnet Addressing Plan for Internet of Things Deployment” and “Reference Model of Protocol Suite for IPV6 interoperable Internet of Things Deployments”. ITU-T SG20 is also working on the Supplement on “IPv6 Potential for the Internet of Things and Smart Cities”. This Supplement will collect information and analyse the impact of IPv6 on IoT and smart cities and communities. It intends to identify relevant use cases and information of IPv6 use and to develop practical suggestions on exploitation of IPv6, where relevant.

**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 the 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. At the ITU-T SG16 meeting in Macau, China in October 2017, experts started working on the draft ITU-T Technical Paper [HSTP.IPTV-Guide.2](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14423) on “IPTV service parameters for new IPTV service providers”, in order to help new implementers of ITU-T’s IPTV standards to decide on several technical parameters, by providing guidelines and examples of good practice gained through I3GT project conducted in different environments, regions or 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. An IPv6 training workshop was conducted in Abidjan, Côte d’Ivoire in September 2017, based on the test bed implemented by ITU. The workshop was attended by 45 participants from nine francophone countries from West and Central Africa. IPv6 test bed implementation is in progress in Cameroon and Zimbabwe.

**3.4** IPv6 deployment and IPv6 Security related direct country assistance was provided to the Department of Information Technology and Telecommunication (DITT) of Bhutan in partnership with APNIC and with the support of the Department of Communications and the Arts of Australia.

**3.5** On 4-8 December 2017 a training on “Internet and IPv6 Infrastructure Security Program” was held in Tonga for the Pacific region in partnership with APNIC and with the support of the Department of Communications and the Arts of Australia.

**3.6** The “ITU Asia Pacific Centre of Excellence Training on “Internet and IPv6 Infrastructure Security Program”, was successfully held from 8-12 May 2017 at TOT Academy, Nonthaburi, Thailand. It built capacity of 35 participants from across Asia-Pacific (Bangladesh, Brunei Darussalam, Cambodia, India, Iran, Laos, Malaysia, Mongolia, Philippines, Sri Lanka and Thailand) in the area of IPv6 and Internet security. The workshop was organized by the ITU, the Ministry of Digital Economy and Society of Thailand and APNIC, with the support of the IEEE Communications Society and the TOT Academy.

**3.7** During the [Caribbean Cyber security Workshop and Cyber drill](http://www.itu.int/en/ITU-D/Regional-Presence/Americas/Pages/EVENTS/2017/20287.aspx), held from 3 to 7 July 2017 in Paramaribo, Suriname, an overview and analysis of the situation of the IPv6 in the Caribbean was presented.

**3.8** BDT and MUST (Malaysia University of Science and Technology) are working closely to establish an ITU IPV6/IoT Expertise Centre. The main goal of this project is to assist Member States by supporting a smooth and well managed transition from IPv4 to IPv6 for IoTs. It includes among others the deployment of appropriate infrastructure, services and applications and raising awareness through conducting technical assistance, trainings and/or workshops on IoT policies and strategies.

**3.9** ITU’s Arab Regional Office in collaboration with the Telecom Regulatory Authority of UAE and the National Telecom Corporation of Sudan implemented the Regional Project on Human Capacity Building on IPv6 for Arab LDCs and Palestine, during the period between 1 December 2016 and 31 May 2017. 31 participants were trained to become certified IPv6 engineers.

**3.10** Within the ITU Arab CoEs Network and in cooperation with SUDCAD-Sudan, a regional training on IPv6 Certified Network Engineering took place on 7-9 May 2017. 19 participants were trained on IPv6 related issues.

**3.11** Through ITU Academy, a course on “IPV6 Technologies, Fundamentals, Design, and Deployment”, is being delivered in cooperation with INICTEL UNI (ITU Center of Excellence).

**3.12** The final report in response to ITU-D SG1 Question 1/1: “Policy, regulatory and technical aspects of the migration from existing networks to broadband networks in developing countries, including next-generation networks, m-services, OTT services and the implementation of IPv6” explores through case studies the experiences of countries in transitioning from IPv4 to IPv6 to enable Internet of Things (IoT), Machine to Machine (M2M), Internet of Everything (IoE), and other future technologies.

# 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) will be holding its 11th meeting on 25-26 January 2018. The Group is currently conducting online Open Consultations on the topic of **"Bridging the Digital Gender Divide" to be** followed by a physical Open Consultation meeting on 22 January 2018.

**4.2** ITU participated in the fourth meeting of the re-established CSTD [Working Group on Enhanced Cooperation on Public Policy Issues Pertaining to the Internet (WGEC)](http://unctad.org/en/Pages/CSTD/WGEC-2016-to-2018.aspx), held on 25-27 September 2017. The meeting continued discussing proposals submitted by various WGEC Members on potential recommendations as a possible output of the Working Group. The Group further discussed the structure and content of its final report. At the next meeting scheduled on 29-31 January 2018 a draft report will be presented by the WGEC Chairman for further discussion by the Group.

**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.

**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.

**4.5** BDT continues to develop its capacity building activities in the field of Internet governance. In 2017, it published the report ["Reviewing Global Internet Governance Capacity Development and Identifying Opportunities for Collaboration"](https://academy.itu.int/index.php?option=com_content&view=article&id=216&Itemid=686&lang=en). The report provides a comprehensive overview of the core topics related to Internet governance, assesses a large number of existing capacity development programmes at global and regional levels, identifies gaps that need to be addressed in future work in the development of capacities in Internet governance and makes recommendations in this regard.

**4.6** BDT organized a regional workshop on "[Strengthening capacities in international Internet governance](https://www.itu.int/en/ITU-D/Capacity-Building/Pages/events/2017/Internet-Governance/AMS/internet-governance.aspx)" in Brasilia, Brazil from 14-16 August 2017, in partnership with DiploFoundation. The objective of the workshop was to strengthen capacities of the ITU membership in the field of international Internet governance. This workshop was the first in a series of regional Internet governance capacity development events that ITU will organize in collaboration with other stakeholders.

# 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, as is the case of Guatemala where the national model was defined between May and September 2017; 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. The national IXP for Guatemala is currently in the implementation phase under the management of its Executive Committee. The implementation is expected to be concluded by the third quarter of 2018.

**6.2** Following the earthquake which affected Mexico City in September 2017, the “[V 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/2017/16967.aspx)”, originally scheduled for 22 September 2017 in Mexico City, Mexico, was postponed until 2018.

**6.3** BDT assists countries (Antigua & Barbuda and St. Kitts & Nevis) in bridging the digital divide in rural communities, through providing equipment to rural community centers connected to the Internet for educational and other development purposes.

**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)**

**7.1** ITU participated in the 12th IGF meeting, held from 17 to 21 December 2017 in Geneva, Switzerland.

**7.2** ITU Secretary-General represented ITU at the IGF 2017 Opening Ceremony and the High Level Thematic Session on [“Shaping our future digital global governance”](https://igf2017.sched.com/event/CSCf).

**7.3** Within the framework of IGF 2017, ITU and UN Women co-organized, on 19 December, the fourth annual [EQUALS in Tech Awards](https://igf2017.sched.com/event/Czqe) (formerly GEM-Tech Awards) to celebrate initiatives that help close the gender digital divide. As a follow-up, an [EQUALS in Tech Panel Discussion](http://sched.co/CTsx) took place on 20 December.

**7.4** ITU co-organized two Open Forums a) on [“WSIS Action Lines advancing the Achievement of SDGs”](http://sched.co/CTrs) co-organized by the WSIS Action Line Facilitators; and b) on [“Strengthening capacities in international Internet governance”](http://sched.co/CTt3) co-organized by ITU, DiploFoundation and SSIG. The latter was based on the report mentioned in section 4.5 and provided an overview of existing capacity development activities by different stakeholder groups. It brought together representatives from key entities dealing with capacity development in Internet governance who shared their experience and highlighted key challenges that need to be addressed.

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