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ITU World Telecommunication Standardization Assembly 2020

Background Paper

Internet Society

Summary

This background paper on the World Telecommunication Standardization Assembly–2020 (WTSA-20) is intended to provide the Internet Society community and interested parties with an outline of the objectives and key issues concerning the Internet to be addressed at WTSA-20 currently scheduled to be held on 1 to 9 March 2022 in Geneva, Switzerland.[1] The paper offers a guide to the following areas:

- Background on the International Telecommunication Union
- Background on the World Telecommunication Standardization Assembly
- The Key Internet-related topics for discussion at WTSA-20
- Role of the Internet Society at WTSA-20

Background on The International Telecommunication Union (ITU)

The ITU is a U.N. specialized agency headquartered in Geneva, Switzerland. The ITU has been around for over 150 years making it one of the oldest international organizations in the world. It plays an important role in forging cooperation in the global communications system, telecommunications infrastructure development and the allocation of radio frequency spectrum.

The ITU includes three sectors that carry out the activities mandated by the Plenipotentiary Conference:

- Radicommunication Sector (ITU-R)
- Telecommunication Standardization Sector (ITU-T); and
- Telecommunication Development Sector (ITU-D).

Sector work programs are developed every four years (WTSA, WTDC, WRC). Plenipotentiary and the ITU Council provide high-level governance for the overall function of the ITU. ITU Council serves as the governing body during the intervening years between Plenipotentiary conferences and is composed of one-fourth of the ITU's Member States, elected on a regional basis during Plenipotentiary. ITU Council addresses decisions that do not involve changing treaty text or elections.

The membership of the ITU is generally comprised of government delegations, or Member States, private industry and other approved organizations that participate as Sector Members or Associates, and Academia. As a U.N. specialized agency only, Member States have voting rights.

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1   Date and location changed from 28 February to 5 March 2021, Hyderabad, India
See, https://www.itu.int/dms_pub/itus/md/21/sg/cir/S21-SG-CIR-0039!!PDF-E.pdf

While Sector Members participate in ITU conferences and assemblies, they do so as Observers. There are 193 Member States and over 700 Sector Members and Associates. Membership in the ITU is largely fee based with some fee reductions or exemptions available to Members that meet the ITU's eligibility criteria. Sector Members may participate in the activities of the Sector to which they join including leadership positions of the Sector Study Groups and Sector Conferences. Associates participate in only one study group in a sector. Each sector has rules of procedures for decision making in study groups.

The World Telecommunication Standardization Assembly

The World Telecommunication Standardization Assembly (WTSA-20)[2] will define the senior leadership team, work program, working methods and structure of Study Groups for the ITU Telecommunication Standardization Sector (ITU-T) for the 2020-2024 study period and will be held in Geneva, Switzerland on March 1 to 9, 2022. The activities of WTSA are outlined under Article 13 of the ITU Convention. During WTSA governments will:

- Decide whether or not to approve draft Recommendations submitted by the Study Groups;
- Consider proposals to retain, dissolve or merge study groups and their Questions;
- Consider proposals to add new Study Groups and Questions that reflect new issues or priorities;
- Consider whether to add, merge, retain or dissolve other groups;
- Agree on the mandate, scope and terms of reference for Study Group work programs (found in WTSA Resolution 2);
- Review WTSA-16 Resolutions for modification or deletion and consider Member State proposals for new Resolutions;
- Elect Chairs and Vice-Chairs of the Study Groups; and
- Consider other policy matters.

ITU-T Recommendations (3) developed by the Study Groups are consensus-based (with some exceptions) and non-obligatory, following the procedures defined in WTSA Resolution 1. During a WTSA, a Recommendation that has been determined, but not approved because there was insufficient time for approval before WTSA, can be proposed for approval by consensus at WTSA; in addition, a Recommendation that has not reached consensus in the Study Groups can be proposed for adoption by majority vote of Member States.

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2   https://www.itu.int/en/ITU-T/wtsa20/Pages/default.aspx

3   ITU-T Recommendations are standards that define how telecommunication networks operate and interwork.
     See: https://www.itu.int/en/ITU-T/publications/Pages/recs.aspx

Despite their voluntary status, some Member States adopt some ITU-T Recommendations into national laws or regulations, thus making them mandatory within those countries.

Preparations for WTSA-20

The work program in ITU-T is organized and structured according to WTSA Resolutions that are reflected in the final WTSA proceedings. During WTSA-20, Member States will consider reports from the Director of the Telecommunication Standardization Bureau (TSB), Mr. Chaesub Lee, from the Study Groups and from Telecommunication Standardization Advisory Group (TSAG) on activities from the previous study period (2016-2020).

Through 2020, the Study Groups will hold their wrap up meetings for the study period and develop their final reports for WTSA-20. The Study Group reports include proposals for

- updating the mandate and terms of Reference for the Study Group,
- adding, modifying, merging, or deleting Questions for the new study period
- approving draft Recommendations.
- modifying Resolutions within the scope of work of the Study Group.

The ITU regional telecommunication organizations will meet ([4]) in the months prior to WTSA-20 to prepare and consolidate regional views on issues important to each region and in the development of common regional proposals for WTSA-20. Over the last few study periods, regional proposals have grown in importance as compared to proposals from individual Member States. The regional organizations that are typically involved in developing common regional positions are listed in Table 1.

Also, each Member State will prepare for WTSA-20 using its national process. In addition to working with its regional group, many Member States will prepare their own proposals for WTSA-20.

The Plenipotentiary and WTSA have typically been the venues where discussions are held on new issues or topics. Since WTSA-16, TSAG created the Rapporteur Group on Standardization Strategy (RG-StdsStrat) to advise on standards strategy, new technological trends and "market, economic and policy needs in the ITU-T's fields of activity"([5]). This development since 2016 presents an alternate path for new work to be brought into ITU-T.

The mandates and terms of reference for the Study Groups and the Questions for study in the study period are contained in Resolution 2 ([6]).

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4   https://www.itu.int/en/ITU-T/wtsa20/prepmeet/Pages/default.aspx

5   https://www.itu.int/en/ITU-T/tsag/2017-2020/Pages/Rapporteur-Groups.aspx#Strategy

6   https://www.itu.int/dms_pub/itu-t/opb/res/T-RES-T.2-2016-PDF-E.pdf

Table 1–Regional WTSA 2020 Preparatory Meetings

ITU Regional Telecommunication Organization	Dates
Africa Telecommunication Union (ATU)	4–7 March 2019, Rabat, Morocco; 7–11 October 2019, Entebbe, Uganda; ATU coordination meeting for WTSA-20 preparation 11-13 February 2020, Geneva, Switzerland; 28-30 July 2020, Virtual meeting; 27 September – 1 October 2021, Virtual meeting
Inter-American Telecommunication Commission (CITEL) PCC.I	3 October 2019, Asunción, Paraguay; 4–6 December 2019, Buenos Aires, Argentina; 20–24 April 2020, Virtual meeting; 27-30 October 2020, Virtual meeting; Virtual Meeting of the WG for the preparation and follow up on WTSA, WCIT and WDTC, 22 January 2021; 28-30 April 2021, Virtual meeting; 4-8 October 2021, Virtual meeting
Asia Pacific Telecommunity (APT)	11-15 June 2019, Tokyo, Japan; 13–15 May 2020, Virtual meeting; 13–17 July 2020, Virtual meeting; 18-21 August, Virtual Interim meeting of WGs; 13-16 October 2020, Virtual Interim meeting of WGs; 16-20 November 2020, Virtual meeting; 17-19 November 2021
Arab Standardization Team	8–10 October 2019, Riyadh, Saudi Arabia; 15–16 April 2020, Virtual meeting; 2 September 2021, Virtual meeting; 6-9 December 2021; January 2022 (TBC)
European Conference of Postal and Telecommunication Administrations (CEPT) COM-ITU committee	4–5 September 2019, Vilnius, Lithuania; 21–23 January 2020, Copenhagen, Denmark; 27–29 May 2020, Virtual meeting; 30 June–1 July 2020, Virtual meeting; 8–9 September 2020, Virtual meeting; 10 November 2020, Virtual meeting; 10 December, Virtual meeting; 20-21 January 2021, Virtual meeting; 1-3 March. 2021, Virtual meeting; 5-7 May 2021, Virtual meeting; 21-23 June 2021, Virtual meeting; 13-15 September 2021, Virtual meeting; 19 October 2021, Virtual meeting; 22-25 November 2021, Virtual meeting; 7 January 2022, Virtual meeting
Regional Commonwealth in the field of Communications (RCC) / CIS	9-10 October 2018, Ashgabat, Turkmenistan; 28 February 2019, Minsk, Belarus; 23 August 2019, Virtual meeting; 1 June 2019, by correspondence; 16-17 September 2019, Nur-Sultan, Kazakhstan; 28 September 2020, Virtual meeting; 8 December 2020, Virtual meeting; 11 December 2020, e-meeting; 17 February 2021, e-meeting; 13 April 2021, e-meeting; 26-27 August 2021, St. Petersburg, Russia, Hybrid meeting; 19-22 October 2021, St Petersburg Russia, Hybdrid meeting; 23-24 November 2021, Tashkent, Uzbekistan; 13 December 2021, e-meeting; December 2021 by correspondence;

Key Topics at WTSA 2020

At the WTSA-20, Member States will set the future direction of ITU-T and decide on how the work program will be organized for the next four-year study period. How new policy proposals are managed within WTSA, how they affect work in ITU-T and how they continue to play out in other fora will be worth following closely particularly on the Internet public policy related issues.

Internet related issues likely to be addressed at WTSA-20 are as follows:

- **"New IP" protocol system**: A proposal to develop a "New IP protocol system" has been made to TSAG [7] and presented to several Study Groups [8]. The proposed work raises important questions about interoperability with the current Internet infrastructure, overlap with standards work in other SDOs, and potentially high implementation costs. Related proposals for specific work items (Questions) have been made in Study Group 11, Study Group 13 and Study Group 17, for example:
  - New network and transport layer protocols (Study Group 11)
  - High Precision Deterministic Networking, enhanced QOS (Study Group 11, 13)
  - New trust architecture and authenticity verification mechanism (Study Group 11, 13 and 17)
  - New addressing and routing scheme (Study Group 13)
- **FG-Network2030**: The Focus Group on Technologies for Network 2030 ([9]) (FG-NETWORK2030) is intended "to study the capabilities of networks for the year 2030 and beyond and is scheduled to wrap up its work before WTSA-20. The output of
- FG-NETWORK2030 could generate proposals for new work in the next study period. There is a strong link between the FG-Networks2030 work and the New-IP proposals.
- **New Technologies**: A plethora of work items related to new technologies have been brought into ITU-T in the last Study Period and are likely to be discussed at WTSA-20, e.g., Artificial Intelligence (AI)/Machine Learning (ML), Multi-access Edge Computing (MEC), Information-centric Networking (ICN), Quantum information technologies, blockchain/distributed ledger technologies (DLT), Augmented Reality/Virtual Reality (AR/VR).
- **Cybersecurity** (Predominantly Study Group -17)**:** Cybersecurity continues to be a hot topic of debate in ITU, as exemplified by the debate in WTDC-17 and in Plenipotentiary 2018 (PP-18) on Resolution 130 ([10]). The work in Study Group 17 has greatly expanded over the last 8 years. In addition to continuing debate over scope of ITU's mandate in Cybersecurity, proposals are likely to include an increased role in privacy and trust

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7   https://www.itu.int/md/T17-TSAG-C-0083/en

8   e.g., https://www.itu.int/md/T17- SG 17-C-0788/en , https://www.itu.int/md/T17- SG 13-C-0871/en

9   https://www.itu.int/en/ITU-T/focusgroups/net2030/Pages/default.aspx

10   "Strengthening the role of ITU in building confidence and security in the use of information and communication technologies"

(beyond current scope on the protection of Personal Identifiable Information), Cyber challenges on a national level, formulating guidelines on the new technologies mentioned above as well as 5G, FinTech, autonomous driving, intelligent transport systems, secure application services, supply chains, virtualization security, zero-trust security, and security orchestration automation and response (SOAR).

- **Identifier Technologies**: Identifier technologies including the Internet of Things, Digital Object Identifiers (DOIs), the Digital Object Architecture (DOA); naming, numbering, addressing and identification (Study Group 2), Policy Frameworks (Study Group 3), Unified identity/identifier/locator split (UIIS) (Study Group 20). The "New IP" proposals will likely include new work on identifiers.
- **Over the Top Communications (OTT):** Policy discussions continue to be discussed in Study Group 3 and will probably be the topic of proposals for WTSA-20. In addition, new areas such as over-the-top TV (Study Group 9, Study Group 16) and testing and measurement (Study Group 12), security technologies or protocols for OTT (Study Group 17) will be proposed for work in the Study Groups.

Other Key Discussions & Considerations:

- COVID-19: The ongoing COVID-19 pandemic has affected operations of ITU-T, requiring meetings either to be postponed or to be virtual. Proposals for modifications of operation of ITU-T to improve virtual meetings and to enable virtual decision-making are anticipated. Member States might propose new work on technologies that can be used to address the pandemic, similar to those made concerning Ebola. If the pandemic stretches into the fall, WTSA-20 itself could be delayed and/or moved.
- Internet of Things: Study Group 20 has worked on Internet of Things over the last 4 years and will likely continue its work. New work proposals will include topics such as Industrial Internet of Things and data management and processing. A related item of discussion will be whether IoT Security should be bundled with the other IoT work in Study Group 20 or if it should remain in Study Group 17.
- Mobile Financial & Banking services: Continuation of work on mobile financial and banking; conformance and interoperability; security and trust; Digital Currency.
- Mobile Roaming: Studies on Costs, termination fees, and regulatory models will continue.
- ITU-T Reorganization: Member States will debate the organization of Study Groups in ITU-T. Some of the goals of Study Group structure include keeping related work items and communities of interest together, minimizing travel for participants and efficiency of operations.

Appendix I list some of the other items being proposed for Study Group work for the next study period.

Table 2 provides a summary of WTSA Resolutions that could have implications on the Internet and potential changes and impacts. One guideline within ITU that could affect the discussion is that WTSA Resolutions should not duplicate Plenipotentiary Resolutions, though this isn't mandatory.

Table 2–WTSA Internet Related Resolutions

Issue Area	Resolution
ITU-T Study Group Mandates	**Resolution 2 (Rev. Hammamet, 2016):** ITU Telecommunication Standardization Sector study group responsibility and mandates
Internet-related issues	**Resolution 20 (Rev. Hammamet, 2016):** Procedures for allocation and management of international telecommunication numbering, naming, addressing and identification resources **Resolution 29 (Rev. Hammamet, 2016)**–Alternative calling procedures on international telecommunication networks **Resolution 47 (Rev. Dubai, 2012)**–Country code top-level domain names **Resolution 48 (Rev. Dubai, 2012)**–Internationalized (multilingual) domain names **Resolution 61 (Rev. Dubai, 2012)**–Countering and combating misappropriation and misuse of international telecommunication numbering resources **Resolution 64 (Rev. Hammamet, 2016)**–Internet protocol address allocation and facilitating the transition to and deployment of IPv6 **Resolution 67** (Non-discriminatory access and use of Internet resources and telecommunications/information and communication technologies
ITU's role in Standardization	**Resolution 44 (Rev. Hammamet, 2016)**–Bridging the standardization gap between developing and developed countries **Resolution 49 (Rev. Hammamet, 2016)** – ENUM
ITU's Role in building confidence and security in the use of ICTs	**Resolution 50 (Rev. Hammamet, 2016)** – Cybersecurity **Resolution 84 (Hammamet, 2016)**–Studies concerning the protection of users of telecommunication/information and communication technology services
Related to WSIS+10	**Resolution 75 (Rev. Hammamet, 2016)**–The ITU Telecommunication Standardization Sector's contribution in implementing the outcomes of the World Summit on the Information Society, taking into account the 2030 Agenda for Sustainable Development
Emerging Technologies	**Resolution 98 (Hammamet, 2016)**–Enhancing the standardization of Internet of things and smart cities and communities for global development

Role of the Internet Society

The Internet Society (ISOC) is a Sector Member of ITU-T and ITU-D. ISOC believes that the ITU has an important role to play in the Internet Ecosystem: promoting core infrastructure development and cross border connectivity, allocating spectrum to enable the deployment of new technologies and services, and providing technical assistance and capacity building. ISOC supports the ITU's role in creating an enabling environment and its international cooperation platform for telecommunications. Additionally, ISOC will engage in discussions and follow activities related to the Internet's technical, social and economic development while continuing to urge that multistakeholder dialogue occur on these issues and that technical recommendations take into consideration Open Standards. As a note, ISOC recognizes and values the importance of a distributed model of governance where each stakeholder group has its own role and responsibility in the Internet Ecosystem. These elements are key considerations to achieving successful outcomes at WTSA-20 whereby the ITU's role is clearly delineated within scope and mandate and that the ITU's commitment to collaboration with other Standards Development Organizations is deepened.

Appendix I–Study Group Proposals for Work

Below is a list of work proposals gleaned from early Study Group discussions. This list is not complete, and proposals could change before WTSA-20. In some areas the work will continue into the next study period.

- **Naming, Addressing, Identifiers**
    - Identity management and authentication (SG 2, SG 3, SG 17, SG 20)
- **Internet Policy considerations**
    - Privacy (SG 17)
    - Cyber challenges on national level (SG 17)
    - Economic/Policy studies of Internet and OTT (SG 3)
- **OTT**
    - Economic and policy aspects (SG 3)
    - TV Services (SG 9, SG 16)
    - Testing/Measurements (SG 12)
- **Network/Transport Layer Protocols**
    - TCP, UDP, QUIC based measurements (SG 12)
    - New transport protocol (SG 11)
    - Metro Transport Network (MTN) (SG 15)
- **Financial**
    - Mobile financial services, mobile payment, cryptocurrency (SG 3, SG 11)
- **New Technology**
    - AI/ML (SG 3, SG 9, SG 11, SG 12, SG 13, SG 15, SG 16, SG 17, SG 20)
    - Blockchain/DLT (SG 2, SG 11, SG 13, SG 17, SG 20)
    - Multi-access Edge Computing (MEC), computing-aware networks (SG 11, SG 13, SG 16, SG 20)
    - Network slicing (SG 11, SG 13, SG 15)
    - Quantum information technology (SG 11, SG 13, SG 15, SG 17)
    - AR/VR (SG 9, SG 11, SG 12, SG 16)
    - Enhanced Internet measurement (SG 11)
    - Industrial Internet of Things (SG 20)
    - Autonomous vehicles, vehicle information systems, traffic information (SG3, SG 11, SG 17)
    - Multi-access Edge Computing (MEC), computing-aware networks (SG 11, SG 13, SG 16, SG 20)
    - Network slicing (SG 11, SG 13, SG 15)
    - ICN (SG 11/SG 13 cont., SG 16)
    - FG-VM (SG 16)
- **FG2030 related**
    - ManyNets, fixed-satellite networks (SG 11, SG 13)
    - Network2030 (SG 11, SG 13, SG 17)

- o Multi-access Edge Computing (MEC), computing-aware networks (SG 11, SG 13, SG 16, SG20)
  - o Network slicing (SG 11, SG 13, SG 15)
  - o New transport protocol (SG 11)
  - o High Precision Deterministic Networking, ultra-low latency, enhanced QOS (SG 11, SG 9, SG 13, SG 15)
  - o Decentralized Trustworthy Network Infrastructure (SG 11, SG 17)
  - o ICN (SG 11/ SG 13, SG 16)
- **Ongoing topics of interest**
  - o Cloud Computing (new to SG 9)
  - o Big data (SG 11, SG 16)
  - o Computing power network (SG 11, SG 5)
  - o Distributed ENUM (SG 11)
  - o Smart healthcare (SG 13, SG 16, SG 17, SG 20)
  - o Smart Sustainable Cities (SG 5, SG 11, SG 17, SG20)
  - o SmartGrid/smart energy networks (SG 15, SG 17)
  - o IoT (SG 20, SG 17)
- **Other**
  - o 4K/8K, UHD video/TV (SG 9, SG 16)
  - o Change television to "audiovisual content" (SG 9)
  - o Counterfeit Software (SG 11)
  - o Digital culture-related systems and services (SG 16)
  - o Digital twinning (SG 20)
  - o Error-prone networks (SG 16)
  - o Generalized real-time communication and messaging (SG 11)
  - o Intent-based networking (SG 13)
  - o IQAS (intelligent question answering system) (SG 16)
  - o LLS (Language learning system) (SG 16)
  - o Man-like networking (SG 13)
  - o Networking telemetry (SG 11)
  - o Signaling and control security (SG 11, SG 15)
  - o Unmanned Aerial Vehicles (SG 11 test, SG 16)
  - o Video content analysis (SG 16)
  - o Wearable devices (SG 11 test, SG 12 measurements)
  - o WebRTC voice quality measurement (SG 12)