A. Participation & submitting contributions in ITU-T Study Group 20

ITU-T SG-20 on "IoT and its applications in Smart Cities & Communities" was created by ITU in June 2013. On the similar lines, National Working Group (NWG) -20 was created in TEC in September 2015. NWG-20 is chaired by DDG (IoT) and having members from all stakeholders. Contributions are being prepared through discussions in NWG-20 meetings and then submitted in almost all the Study Group-20 meetings. Officers of IoT division are regularly participating in the meetings / e-meetings. NWG-20 has been reconstituted in 2017 for the SG-20 study period 2017-2020. Tentative details are as given below:

S.No.	Details of ITU-T SG-20 Meeting	Number of Contributions	Participation	Outcome
1.	SG-20, Meeting, Singapore, Jan 2016	Two + One related to Template was submitted in the meeting	Delegation attended the meeting physically	Contribution presented and agreed.
2.	e-meeting, May-June 2016	Two	Attended	Contributions refined.
3.	SG-20, Geneva, July 2016	Five	Delegation attended the meeting physically	**Template agreed for submission of use cases in ITU-T SG-20.** **Work item Y.IoT-use cases created.**
4.	e-meeting, Dec 2016	Four	Attended	Contributions refined.
5.	SG-20, Dubai, March 2017	Three	Remotely participated	Contributions presented and included in the draft document.
6.	SG-20, Geneva, Sept 2017	Four	Delegation attended the meeting physically	Contributions presented and included in the draft document.
7.	RGM, Geneva, Jan 2018	Four	Delegation attended the meeting physically	Contributions presented and included in the draft document.
8.	SG-20, Cairo, May 2018	Two	Remotely participated	Contributions presented and included in the draft document.
9.	SG-20, China, Dec 2018	Five	Remotely participated	Document having contributions submitted & presented/ refined in the meetings mentioned at s.no. 4 to 9, above, has been agreed and published as **ITU-T Recommendation Y Suppl. 53 on IoT use cases.** Details available in section B.

10.	SG-20 Meeting, Geneva, April 2019	Two	Remotely participated	Contributions presented.
11.	SG-20 Meeting, Geneva, 25 November-6 December 2019	Two	Remotely participated	Document having contributions submitted & presented in the meetings at 10-11 and other e-meetings on **Y.SCC- use cases "Use cases on Smart cities and communities"** agreed/ accepted in the meeting and published as **ITU-T Recommendation Y Suppl. 56.** Details available in section B
12.	SG-20 Meeting, Virtual, 6-16 July 2020	one	Remotely participated	Contribution on Y.SRC submitted and presented.
13.	SG-20 WP1 e-Meeting, Nov 2020	two	Remotely participated	Contribution on Y.SRC submitted and presented.
14.	SG-20 RGM Q2/20, e-Meeting, Feb 2021	two	Remotely participated	Contribution on Y.SRC submitted and presented.
15.	SG-20 e-Meeting, May 2021	two	Remotely participated	Contribution on Y.SRC submitted and presented.

B. Significant contributions made/ accepted by ITU from NWG-20, IoT division

1. **IoT Use case document converted into ITU standards in ITU-T SG-20, Dec 2018:** -Based on the technical reports released in TEC, contributions were prepared and submitted in ITU-T SG-20 meetings time to time. First time, two contributions were submitted in SG-20 meeting held in Singapore, January 2016. Based on these contributions and the use case in technical report, template was proposed as a contribution. It was discussed in Singapore meeting, e-meetings and finally approved in ITU-T SG-20 meeting held in Geneva –July 2016. This template was standardized for submitting use cases in SG-20. Work item "**Y.IoT-use cases**" was also created based on Indian contribution for submitting use cases.

   Contributions are being submitted almost in all the SG-20 meetings. Some of the important contributions submitted from India in "**Y.IoT-use cases**" in the last 2-3 years are as given below (i to v) and vi from Egypt:

   - i.   Vehicle emergency call system for automotive road safety
   - ii.   Digitization and automation of Vehicle Tracking, Safety, Conformance, Registration and Transfer via the application of e-SIM and Digital Identity
   - iii. Remote monitoring the health of a patient
   - iv.   Connected Smart homes
   - v.   AMI
   - vi.   RFID Based Digital Identification for Vehicle Tracking, Registration, and Data Transfer

   This work item had reached an agreement in the ITU-T SG-20 meeting held in China, Dec 2018. It has been published as ITU-T Recommendation Y Suppl. 53 (12/2018).

   Mr. Sushil Kumar, DDG (IoT) TEC was an editor in this work item, Y.IoT-Use-Cases (Supplement), besides Mr. Marco Carugi, NEC Japan, Ms Xueqin Jia, China Unicom, China and Toru Yamada NEC Japan.

2. **Y.SCC- use cases "Use cases on Smart cities and communities" converted into ITU Standards in ITU-T SG-20 meeting, Geneva, Dec 2019: -** This document has been approved / accepted in the ITU-T SG-20 closing plenary meeting, 6th Dec 2019. It is having total nine Smart city use cases, submitted from Japan, Korea, UK and India. Contributions were submitted in this work item by IoT division TEC in the SG-20 meetings and presented remotely.This document has been published as ITU-T as **Recommendation Y Suppl. 56 (12/ 2019)**.
   Mr. Sushil Kumar, DDG (IoT) TEC worked jointly as an editor in this document.

   Both the abovementioned use cases may be implemented to create smart infrastructure, which will resolve a number of issues of the respective vertical and in turn improve the quality of life.

C. Other significant contributions at International level from IoT division

1. Contribution on **Resolution 98 "Enhancing the standardization of Internet of things and smart cities and communities for global development"** was discussed and presented on 20th August 2020 in Virtual Interim Meeting of Working Groups of the **APT WTSA-20** (APT WTSA20-WGS-IM-2), 18-21 August 2020. The contribution is further refined and again submitted for the next Virtual Interim Meeting of Working Groups of APT WTSA-20 (APT WTSA20-WGS-IM-3) to be held from 13-16 October 2020.

2. Following **two contributions** from Indian Administration were submitted from IoT division TEC for **26th Meeting of APT Wireless Group (**AWG-26 Meeting), 14-18 September 2020-

   a. Proposal for WORKING DOCUMENT TOWARDS A DRAFT NEW APT REPORT ON "TECHNOLOGY AND SPECTRUM MANAGEMENT TECHNIQUES FOR IoT NETWORKS"

   b. Proposal for LTE and 5G NR based V2X in Working Document Towards "Cellular Based V2X for ITS applications in APT Countries"

   Both the documents were discussed and presented in AWG-26 Meeting, 14-18 September 2020. Contribution mentioned in point 'a' above was approved in the closing plenary of AWG-26 meeting.