

**Agenda item: PL 3.1**

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Note by the Secretary-General

## **Report on the implementation of the Strategic Plan and the activities of the Union for 2018-2019 (ITU Annual Progress Report)**

### **Summary**

This Report combines the Annual Activities Report (CV 102) and the Report on the implementation of the Strategic Plan (CV 61; Resolution 71 (Rev. Dubai, 2018)). It focuses on the progress made towards achievement of the strategic goals and objectives of the Union for 2018-2019.

### **Action required**

The Council is invited **to approve** this document.

### **References**

CV 61 and 102, Resolution 71 (Rev. Dubai, 2018)



## ITU Radiocommunication Sector (ITU-R)

- ITU-R has significantly advanced with preparations for RA-19 and WRC-19. The studies are being conducted within ITU-R, with the support of the regional groups and other international organizations.
- The second ITU Inter-regional Workshop on WRC-19 preparation was held and provided an opportunity to exchange views on the proposals and common positions of stakeholders.
- Throughout the year, ITU-R continued to process space and terrestrial notices and other related activities. ITU-R software was improved, and new applications were delivered.
- The Radio Regulations Board (RRB) met three times and approved new or modified Rules of Procedures related to WRC-15 decisions. The RRB took decisions on specific cases of satellite networks; made significant progress in reducing interference cases from Italy into its neighbours' television services; and reviewed the harmful interference caused by a satellite network to a radio astronomy service.
- New and revised recommendations were approved; numerous reports were published. Assistance was provided to members, especially in developing countries, and capacity-building activities were carried out. These activities included one World Radiocommunication Seminar (WRS-18), two Regional Radiocommunication Seminars, a satellite symposium and four workshops on satellite communications, among others.
- The fourth ITU Regional Frequency Coordination Meeting was held for Central America and the Caribbean Region on the use of the VHF band and the UHF band. This meeting concluded the Region's coordination work.
- Finally, the second session of CPM-19 (CPM19-2) was held in February 2019 and represented a significant milestone in the preparation of WRC-19. CPM19-2 approved a consolidated report to WRC-19, summarizing ITU-R preparatory studies and providing possible solutions to WRC agenda items and issues.

## ITU Standardization Sector (ITU-T)

- ITU-T [approved](#) more than 150 new and revised ITU standards (ITU-T Recommendations)<sup>1</sup> during the reporting period.
- Membership continues to assign high priority to ITU-T standardization work on the non-radio elements of IMT-2020 (5G) systems.
- Significant progress was made in the development of a new video coding standard, which will be known as "Versatile Video Coding" (VVC).
- Quantum information technologies including quantum key distribution and quantum-safe communications entered the ITU-T work programme, motivating seven companies and two universities with expertise in the field to join ITU-T as members.
- ITU Kaleidoscope 2018 [Conference proceedings](#) were published in December 2018. The ITU Journal: *ICT Discoveries* special issue on [Data for Good](#) was published in March 2019.
- Preparations for WTS-20 started in TSAG, ITU-T study groups and in the regions.

<sup>1</sup> WSIS Action Lines C2, C5, C6.

- TSAG approved the establishment of the Standardization Programme Coordination Group (SPCG)<sup>2</sup> for the strategic coordination of standardization work undertaken by IEC, ISO and ITU-T.
- TSB continues to maintain and expand ITU-T's advanced electronic working methods. New applications and services include MyWorkspace, a new search engine, automatic translation powered by machine learning and a new tool for e-meetings.

## ITU Development Sector (ITU-D)

- The 18th edition of the Global Symposium for Regulators (GSR) was held from 9 to 12 July in Geneva under the theme, "New Regulatory Frontiers". The event culminated with ICT regulators adopting a set of Best Practice Guidelines on new regulatory frontiers to achieve digital transformation.
- The 16th [World Telecommunication/ICT Indicators Symposium](#) (WTIS) was held in Geneva from 10 to 12 December. WTIS-18 highlighted the important work that ITU carries out in terms of ICT statistics and the role of WTIS in bringing together ICT data producers and users. The Symposium also provided opportunities to discuss ICT measurement issues, to share experiences and to learn from each other.
- 131 countries organized International Girls in ICT Day events in 2018, encouraging 57,748 girls participating in 2,186 events to take up ICT careers and studies. In total, 121 countries worldwide held events.
- In 2018, BDT carried out numerous capacity-building activities, designed to strengthen skills and enhance knowledge in the field of telecommunication/ICT among ITU members. The capacities of ITU Member States to develop national e-strategies and to foster an enabling environment for upscaling ICT applications were seen in areas such as e-agriculture, e-health (including the global "Be Healthy, Be Mobile" programme conducted by ITU and WHO) and e-learning.
- BDT continued to provide assistance in different areas. This included, within selected countries, broadband connectivity and developing ICT applications. Thereby, providing free or low-cost digital access for schools, hospitals and underserved populations in rural and remote areas as well as building trust and confidence in the use of ICTs.
- ITU-D Study Groups and Rapporteur Group meetings were successfully organized, providing an opportunity for the membership to share experiences, present ideas, exchange views and achieve consensus on strategies to address telecommunication/ICT priorities.
- Partnership and resource mobilization were further enhanced in 2018. In total, 43 new partnership agreements were signed with various stakeholders. ITU-D membership was further expanded through new sector members, associates and affiliated academic institutions.
- To accelerate the achievement of the Buenos Aires Action Plan, the innovation programme further strengthened the innovation platform through the development of new products and services.
- The 3rd Global Forum on Emergency Telecommunications (GET-19)- Innovating together to save lives: using technologies in disaster management, took place from 6 to 8 March 2019, in Balaclava, Mauritius. The event highlighted the link between ICTs, disaster risk reduction and development. It showed how incredible growth in ICT networks and services and innovation in technologies created opportunities for saving lives, reducing risks and limiting the impact of disasters.
- The 24th meeting of the Telecommunication Development Advisory Group (TDAG) took place from 3 to 5 April 2019 in Geneva. TDAG discussed issues and advised the BDT Director on various topics, including the outcomes of PP-18 related to the work of ITU-D, ITU-D four-year rolling Operational Plan 2020-2023 and implementation of the Strategic/Operational Plan 2018. During

<sup>2</sup> WTS Resolution 7; WSIS Action Line C11; SDG Target 17.6

TDAG, breakout sessions on process/governance and programme topics, and informal sessions on regional initiatives were held.

## Inter-Sectoral objectives and results

- Activities continued relating to inter-sectoral topics such as cybersecurity, Internet issues, climate change, emergency telecommunications, accessibility, e-health, Smart Sustainable Cities, e-waste, gender and empowerment of youth through ICTs. The results of these activities are described in the corresponding sections for sector and inter-sectoral objectives.
- During this period, ITU continued playing a leading role on activities related to the World Summit on the Information Society (WSIS). Activities included, but were not limited to, the organization of the Annual WSIS Forum 2019. The Forum was hosted by ITU and co-organized by ITU, UNESCO, UNDP, and UNCTAD, in close collaboration with all WSIS Action Line Facilitators/Co-Facilitators (UNDESA, FAO, UNEP, WHO, UN Women, WIPO, WFP, ILO, WMO, UN, ITC, UPU, UNODC, UNICEF, and UN Regional Commissions).
- ITU Telecom World 2018 took place from 10 to 13 September in Durban, South Africa, welcoming 3 700 participants from 94 countries and 300 exhibitors, sponsors and partners from 32 countries including 125 SMEs. It was the first time that an ITU Telecom World event had been hosted in the Africa region and brought together nations, leading players and SMEs from across Africa and round the world. The event explored the theme of “Innovation for smarter digital development”.
- The Broadband Commission held its annual fall meeting in New York from 22 to 23 September. Every year, the Broadband Commission publishes its annual ‘State of Broadband’ report. Launched in September 2018, the report showed a growing number of governments benchmarked the status of broadband in their national broadband plans. The report showcased that, for the first time, at least 15 countries have strategies in place for promoting the safe use of artificial intelligence. In January 2019, a special session of the Broadband Commission and the World Economic Forum was held at the WEF Annual Meeting 2019 in Davos under the theme, “Connecting the world in the 4th Industrial Revolution”.
- A joint-effort between ITU and 32 UN agencies and bodies, the second AI for Good Global Summit, the “AI for Good UN Partners Meeting”, was held on 24 September 2018, in the UNFPA headquarters in New York.
- As a United Nations specialized agency, ITU collaborated, participated and interacted within the United Nations system during this reporting period. Key areas of interest and interaction include ICTs for development (digital divide, gender, youth, inclusion, climate change, technology transfer, capacity building); the WSIS follow-up process; ITU/ICT-related issues (Security Council, Outer Space, Cyber Security); MDG follow-up; Agenda 2030/SDGs; and the abovementioned Broadband Commission.



# Table of Contents

Executive Summary	iii
ITU Radiocommunication Sector (ITU-R)	iii
ITU Standardization Sector (ITU-T)	iii
ITU Development Sector (ITU-D)	iv
Inter-Sectoral objectives and results	v
1 Introduction: Aim of this Report	1
2 Strategic Goals of the Union	1
2.1 Goal 1: Growth	1
2.2 Goal 2: Inclusiveness	4
2.3 Goal 3: Sustainability	9
2.4 Goal 4: Innovation and partnership	11
ITU Sector and Intersectoral Objectives	12
3 ITU-R objectives and results achieved (Radiocommunication Sector)	12
Objective R.2: Provide for worldwide connectivity and interoperability, improved performance, quality, affordability and timeliness of service and overall system economy in radiocommunications, including through the development of international standards	17
Objective R.3: Foster the acquisition and sharing of knowledge and know-how on radiocommunications	21
4 ITU-T objectives and results achieved (Telecommunication Standardization Sector)	24
Objective T.1: Develop non-discriminatory international standards (ITU-T recommendations), in a timely manner, and foster interoperability and improved performance of equipment, networks, services and applications	24
Objective T.2: Promote the active participation of the membership, in particular developing countries in the definition and adoption of non-discriminatory international standards (ITU-T recommendations) with a view to bridging the standardization gap	30
Objective T.3: Ensure effective allocation and management of international telecommunication numbering, naming, addressing and identification resources in accordance with ITU-T recommendations and procedures	32
Objective T.4: Foster the acquisition and sharing of knowledge and know-how on the standardization activities of ITU-T	34
Objective T.5: Extend and facilitate cooperation with international, regional and national standardization bodies	36
5 ITU-D objectives and results achieved (Telecommunication Development Sector)	39
Objective D.1: Foster international cooperation on telecommunication/ICT development issues	39
Objective D.2: Foster an enabling environment for ICT development and foster the development of telecommunication/ICT networks as well as relevant applications and services, including bridging the standardization gap	43
Objective D.3: Enhance confidence and security in the use of telecommunications/ICTs, and roll-out of relevant applications and services	47

Objective D.4: Build human and institutional capacity, provide data and statistics, promote digital inclusion and provide concentrated assistance to countries in special need	49
Objective D.5: Enhance environmental protection, climate-change adaptation and mitigation, and disaster-management efforts through telecommunications/ICTs	54
<b>6 Inter-Sectoral objectives and results achieved</b>	<b>56</b>
Objective I.1: Enhance international dialogue among stakeholders	57
Objective I.2: Enhance partnerships and cooperation within the telecommunication/ICT environment	59
Objective I.3: Enhance identification and analysis of emerging trends in the telecommunication/ICT environment	59
Objective I.4: Enhance/promote recognition of (the importance of) the telecommunications/ ICTs as a key enabler of social, economic and environmentally sustainable development	61
Objective I.5: Enhance access to telecommunications/ICTs for persons with disabilities and specific needs	64
<b>7 Enablers of the Activities of the Union</b>	<b>66</b>
Enabler E.1: Ensure efficient and effective use of human, financial and capital resources, as well as a work-conducive, safe and secure working environment	66
Enabler E.2: Ensure efficient and accessible conferences, meetings, documentation, publications and information infrastructures	68
Enabler E.3: Ensure efficient membership-related, protocol, communication and resource mobilization services	70
Enabler E.4: Ensure efficient planning, coordination and execution of the strategic plan and operational plans of the Union	72
Enabler E.5: Ensure effective and efficient governance of the organization (internal and external)	72
7.1 Support services/processes	73
<b>8 Activities of ITU governing bodies</b>	<b>79</b>
8.1 ITU Council	79
8.2 Council Working Groups and Expert Groups	79
8.3 Plenipotentiary Conference	79
<b>Annex 1: Implementation of ITU Decisions, Resolutions, and Recommendations</b>	<b>81</b>



# 1 Introduction: Aim of this Report

This Annual Progress Report is aligned with the ITU strategic plan 2016-2019, including goals, targets and objectives. It focuses on progress made towards achieving these strategic goals and objectives. Progress is measured and presented in this report using the indicators endorsed by the membership in the operational plans of the three Sectors and the General Secretariat. It covers activities from the third quarter of 2018 to the first quarter of 2019. Some activities from the first half of 2018 have been included to complete the report.

# 2 Strategic Goals of the Union

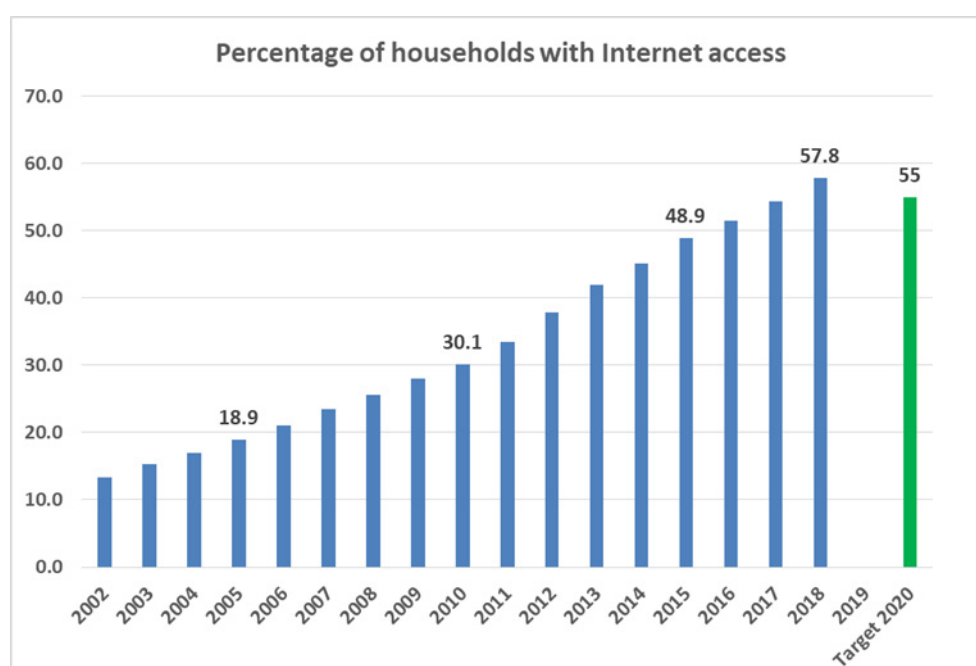
The Connect 2020 Agenda was adopted by the 2014 Plenipotentiary Conference as part of ITU's Strategic Plan for the 2016-2019 quadrennium. At the heart of the Agenda and the ITU strategic plan are four goals relating to:

- **Growth** – enabling and fostering access to and increased use of ICTs.
- **Inclusiveness** – bridging the digital divide and providing broadband for all.
- **Sustainability** – managing challenges resulting from ICT development.
- **Innovation and partnership** – leading, improving and adapting to the changing technology environment.

The four goals include 17 targets designed to track the progress of each goal up to 2020 and to help ITU and other stakeholders focus their priorities during that period.

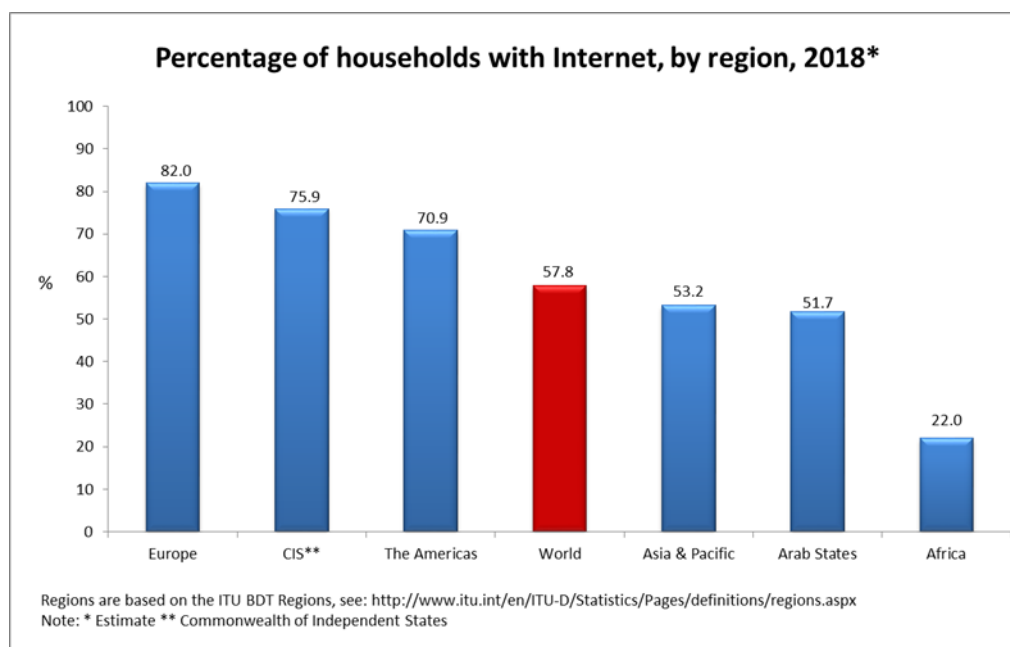
## 2.1 Goal 1: Growth

Target 1.1: Worldwide, 55% of households should have access to the Internet by 2020



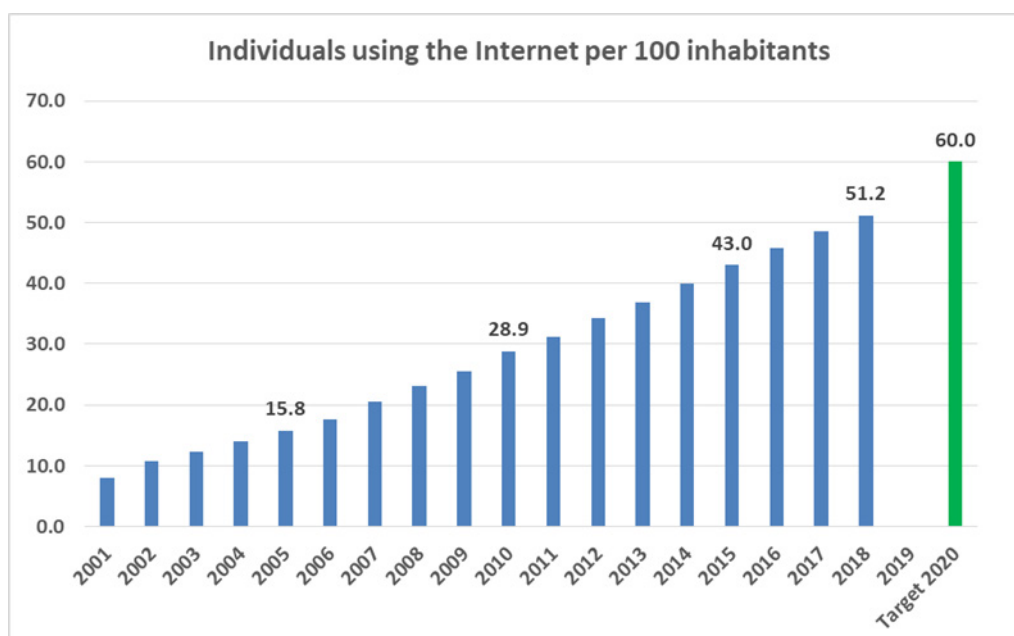
Source: ITU

In 2015<sup>1</sup>, 49 per cent of households worldwide had access to the Internet. That figure rose to 53.6 per cent in 2017 and reached 57.8 per cent by the end of 2018. Therefore, target 1.1 was achieved. The Internet (household) penetration per region is also shown below.



Source: ITU

**Target 1.2: Worldwide, 60% of individuals should be using the Internet by 2020**



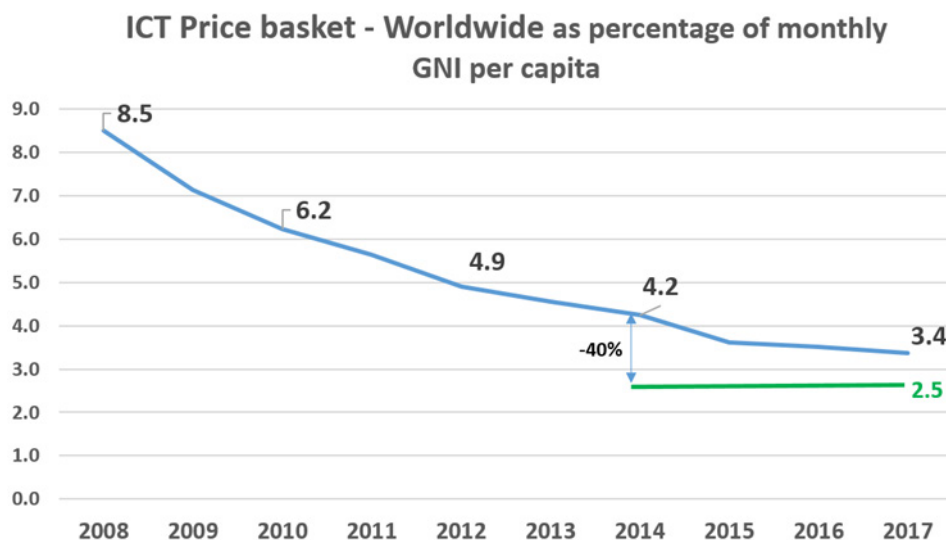
Source: ITU

The proportion of individuals using the Internet worldwide in 2015 was 43.2 per cent, which increased to 48 per cent by 2017. In 2018, the proportion of individuals worldwide using the Internet was 51.2

<sup>1</sup> Targets were fixed at PP-14, therefore 2015 is used as baseline throughout this Chapter

per cent. Target 1.2 will be achieved before the 2020 deadline. Having 50% of the population connected online is a milestone to be highlighted.

#### Target 1.3: Worldwide, telecommunication/ICT should be 40% more affordable by 2020

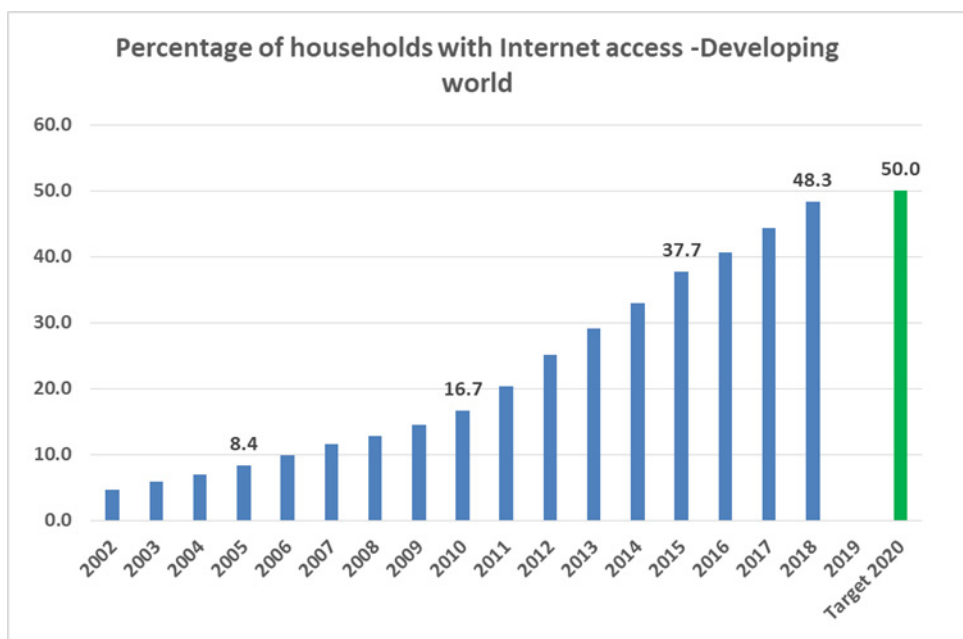


Source: ITU

Target 1.3 aims to make telecommunication/ICT 40 per cent more affordable by 2020 versus the 2014 baseline. The ICT price basket (ITU data) as percentage of GNI has decreased worldwide from 4.2 in 2014 to 3.4 in 2017. This is equivalent to a 19% decrease. At this rate, the value in 2020 should be close to 2.7, slightly above the 2.5 expected as per the target (see figure). A decrease on the reduction rate has been observed since 2015. If we consider only mobile broadband price basket as percentage of GNI per capita (prepaid, handset 500 MB), its value decreased from 5.5 per cent in 2014 to about 3.6 per cent globally in 2017. This decrease is close to 35 per cent, making it very likely that the target will be achieved by 2020.

## 2.2 Goal 2: Inclusiveness

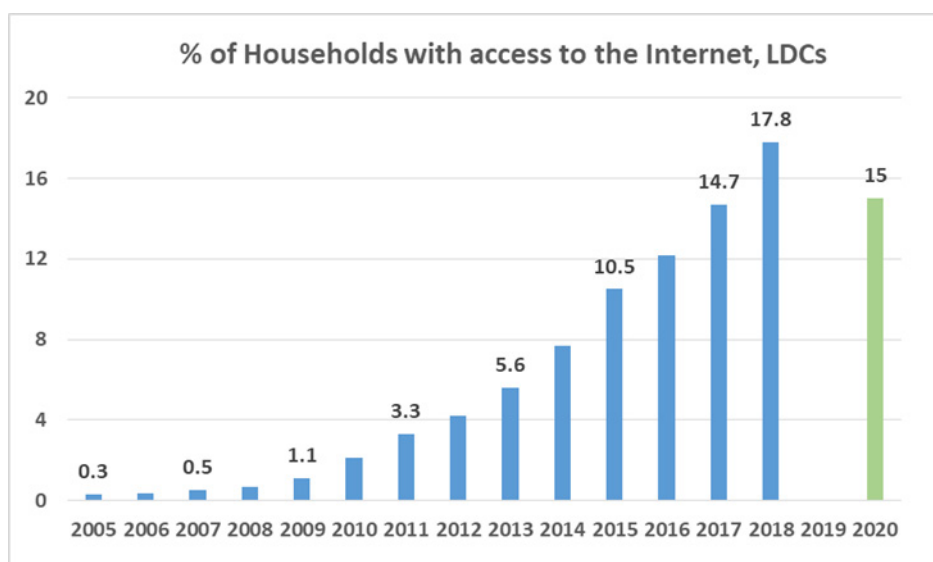
Target 2.1.A: In the developing world, 50% of households should have access to the Internet by 2020



Source: ITU

In 2015, the proportion of households in developing countries that had access to the Internet was 37.8 per cent. By the end of 2018, the number of Internet-connected households in developing countries reached 48.3 per cent. This target is therefore expected to be achieved by the year 2020.

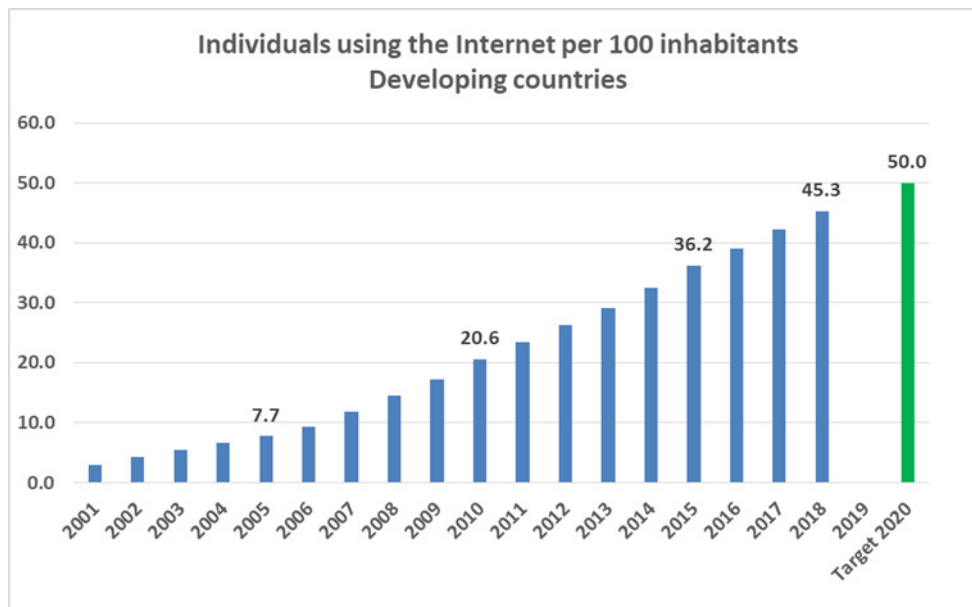
Target 2.1.B: In the least developed countries (LDCs), 15% of households should have access to the Internet by 2020



Source: ITU

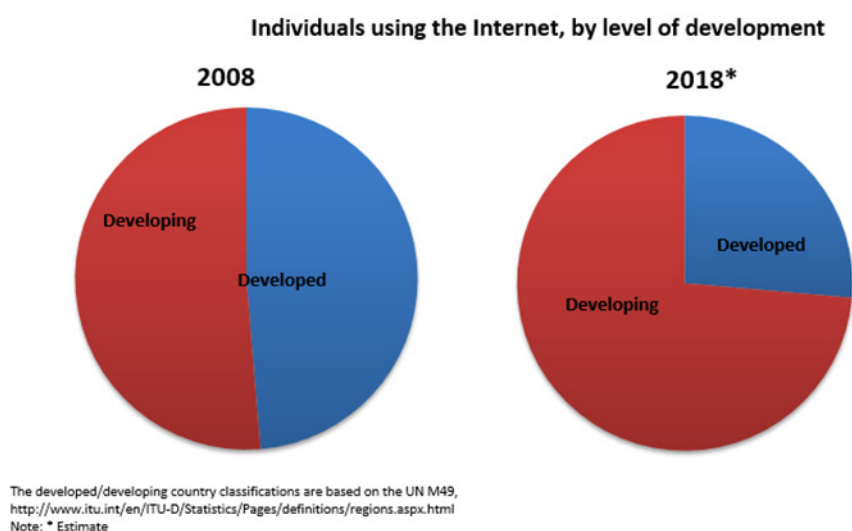
In LDCs, 10.5 per cent of households had access to the Internet in 2015; this proportion increased to 14.7 per cent in 2017. By the end of 2018, the number of connected households was 17.8 per cent, exceeding the target for 2020.

**Target 2.2.A: In the developing world, 50% of individuals should be using the Internet by 2020**



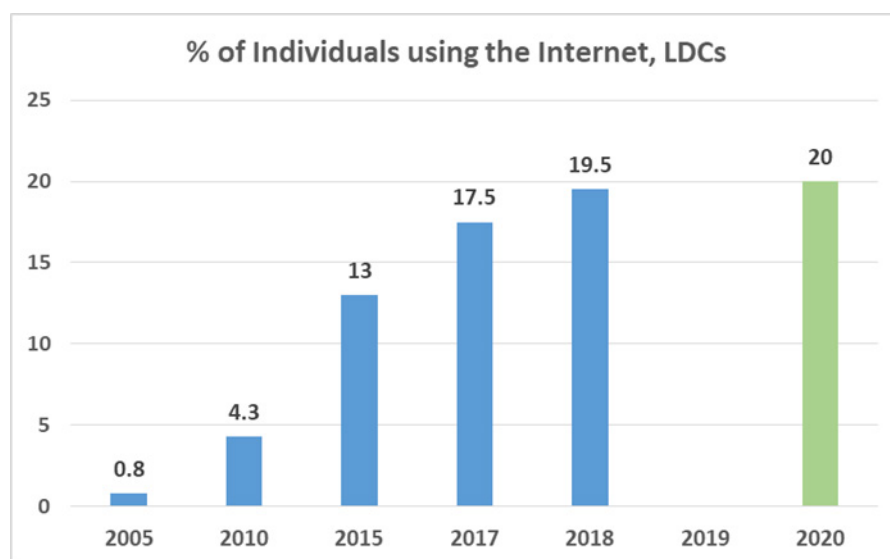
Source: ITU

In 2015, in the developing world, 36.1 per cent of individuals were using the Internet, which increased to 41.3 per cent in 2017. By the end of 2018, the proportion of Internet-connected individuals in the developing world reached 45.3 per cent. As such, a 4.7 percentage point increase is still required between 2019- 2020 to meet the target of 50 per cent.



Source: ITU

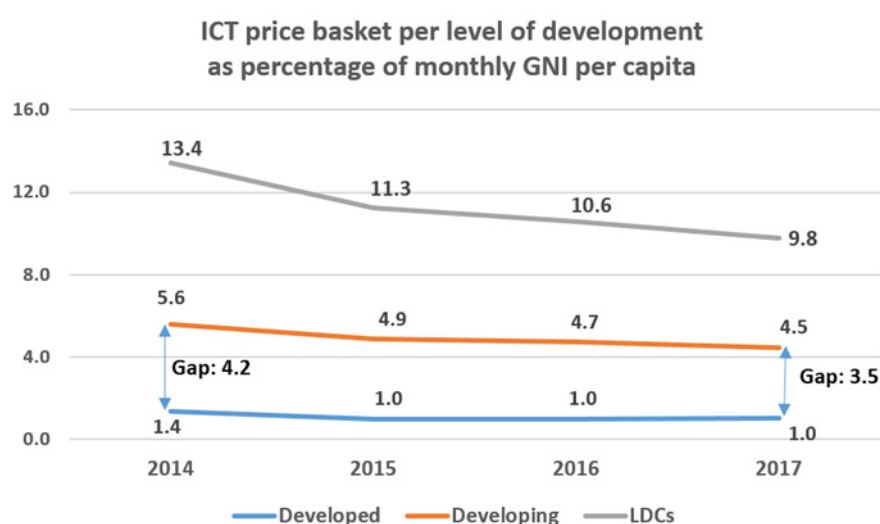
**Target 2.2.B: In the least developed countries (LDCs), 20% of individuals should be using the Internet by 2020**



Source: ITU

The proportion of the population living in least developed countries that were using the Internet in 2015 was 13.0 per cent. By the end of 2018, the proportion of the population using the Internet reached 19.5 per cent, leaving just 0.5 percentage points to meet the Connect 2020 target of 20 per cent. Despite being on track, within the world's 47 least-developed countries (LDCs), Internet uptake remains relatively low. Four out of five individuals (80 per cent) are not yet using the Internet.

**Target 2.3.A: The affordability gap between developed and developing countries should be reduced by 40 per cent by 2020**

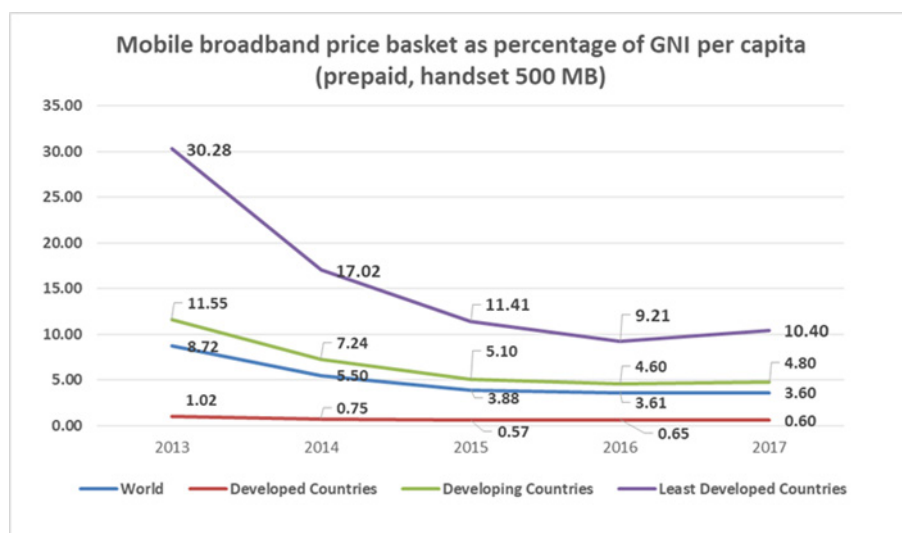


Source: ITU

The difference in the affordability of fixed broadband and mobile-cellular services between developed and developing countries fell significantly during the period 2008-2012, followed by a slowdown over

the period 2012-2014 and even an increase in the case of fixed broadband in 2014. The gap continued to narrow between 2014 and 2015. The difference in the affordability of mobile broadband services fell from 2013 to 2014 and continued to decrease, albeit only slightly, between 2014 and 2017. However, if we consider the full ICT Price basket, the affordability gap (see figure) decreased from 4.2 in 2014, to 3.5 in 2017, i.e. a reduction of about 17%. At this rate, the reduction in 2020 should be higher than 40%. A similar behavior can be observed when looking at LDCs (see figure).

**Target 2.3.B: Broadband services should cost no more than 5% of average monthly income in developing countries by 2020**



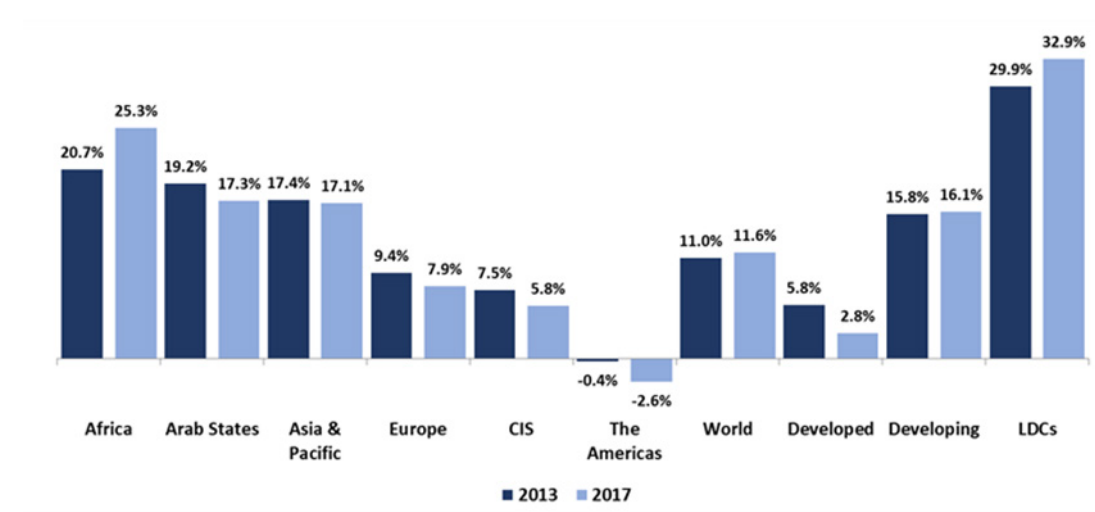
Source: ITU

By 2017, a total of 120 economies (out of 160 for which data were available) had achieved the target of broadband services costing no more than 5 per cent of average monthly income, including all developed countries and 78 developing economies. This was an increase of 18 more countries reaching the target than had in early 2015. Altogether, 18 developing countries and 38 LDCs, for which data were available, need to achieve further reductions in broadband prices to achieve the target. Other countries, for which no data were available, must also do so. If we focus on existing data on Mobile broadband price basket as percentage of GNI per capita (prepaid, handset 500 MB), it decreased from 7.24 per cent in 2014 to 4.8 per cent in 2017.

**Target 2.4: Worldwide, 90% of the rural population should be covered by broadband services by 2020**

Target 2.4 aims to ensure that 90 per cent of the world's rural population will be covered by broadband services by 2020. Whether this target will be met or not, depends largely on how quickly 2G coverage will be replaced by 3G coverage. Currently, 2G covers well over 90 per cent of the rural population, so with sufficient upgrades, this target could be met.

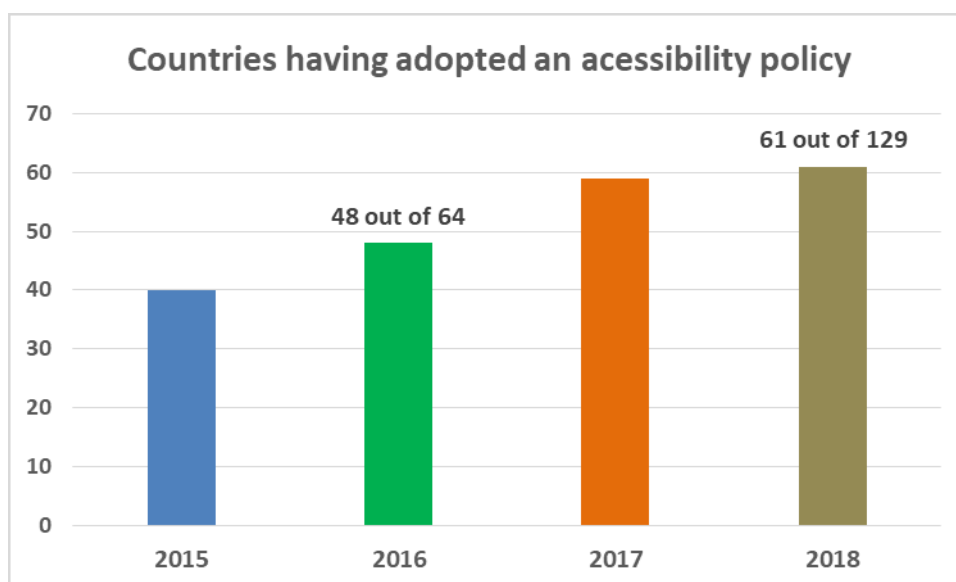
## Target 2.5.A: Gender equality among Internet users should be reached by 2020



Source: ITU

Gender equality, in terms of Internet access, is the goal of Target 2.5.A. In recent years, the rapid growth in developing countries was paired with increasing gender inequality. The latest ITU data shows that the gender gap has increased from 11.0 per cent in 2013 to 11.6 per cent in 2017. Therefore, this target is off track.

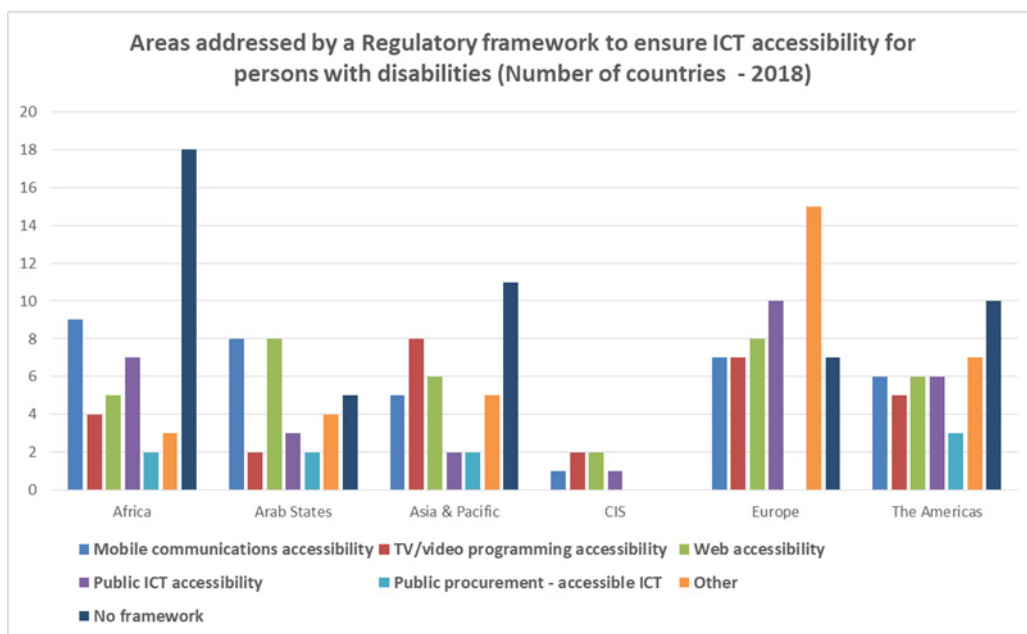
## Target 2.5.B: Enabling environments ensuring accessible telecommunication/ICT for persons with disabilities should be established in all countries by 2020



Source: ITU

Target 2.5.B. focuses on having a strategy to ensure ICT accessibility for persons with disabilities. In 2016, 48 out of 64 reporting countries have a strategy that covers accessibility. In 2018, 61 out of the 129 respondents have an accessibility policy, making this target off track. Chart below shows the different areas addressed by the regulatory frameworks per region.





Source: ITU

## 2.3 Goal 3: Sustainability

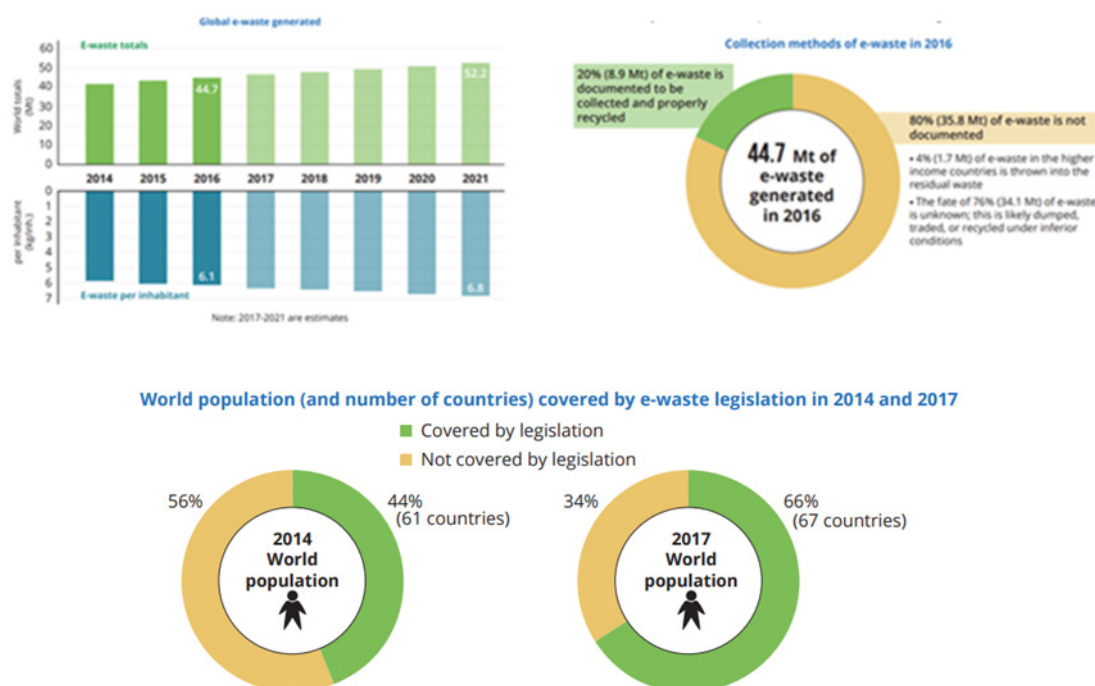
### Target 3.1: Cybersecurity readiness should be improved by 40% by 2020



Source: Global Cybersecurity Index 2018

Under Target 3.1, cybersecurity readiness should be improved by 2020. Since 2016, ITU has measured readiness using the Global Cybersecurity Index. The number of countries with a CERT/CIRT/CSIRT has improved since 2017 (50%), with 56 per cent having a CERT/CIRT/CSIRT in 2018. CERTS should be active at all times to help detect attacks on government computer systems and data as well as critical infrastructures.

In 2018, the majority of countries (58%) reported having a national cybersecurity strategy (NCS), which is an increase from last year (50%), and 47 per cent have metrics to measure cybersecurity development at a national level, which is also an improvement, since in 2017 only 21 per cent had metrics.

**Target 3.2: Volume of redundant e-waste to be reduced by 50% by 2020**

Source: Global E-waste Monitor 2017

ITU, together with the United Nations University (UNU) and ITU membership, is developing a policy, and regulatory and technical framework, to steer production, handling, growth and innovation in the ICT sector towards greater sustainability. In 2016 only 8.9 megatonnes of e-waste (20 per cent of the total) was documented as having been properly recycled, whereas 35.8 megatonnes (80 per cent) was not. In 2014, only 44 per cent of the global population was covered by national e-waste legislation. By 2017, the proportion had risen to 66 per cent.

Additionally, ITU-T Study Group 5 “Environment, Climate Change and Circular Economy” developed Recommendation ITU-T L.1031 “Guideline on implementing the e-waste reduction target of the Connect 2020 Agenda”. This Recommendation describes a three-step approach to address the e-waste reduction target of the Connect 2020 Agenda. These steps consist of guidance on developing an e-waste inventory, approaches to design e-waste prevention and reduction programs, and the supportive measures required for successfully implementing the Connect 2020 e-waste target.

**Target 3.3: Greenhouse gas emissions generated by the telecommunication/ICT sector to be decreased per device by 30% by 2020**

Together with its Sector Members and industry associations, ITU is developing a roadmap to address challenges arising from the increased use and new developments of technologies and the greenhouse gas (GHG) emissions associated with them. ITU-T Study Group 5 is working on a plan for GHG emissions reduction. ITU-T SG5 approved Recommendation ITU-T L.1450 “Methodologies for the assessment of the environmental impact of the information and communication technology sector” and ITU-T L.1460 “Connect 2020 greenhouse gas emissions- Guidelines”. Although global figures are not available, it is expected that this target may have been achieved as a result of the widespread adoption of mobile devices with significantly lower energy footprints. It is estimated that by 2030, digitally enabled technology could help prevent up to 12.1 gigatonnes of CO<sub>2</sub> equivalent emissions, compared to the current output.

## 2.4 Goal 4: Innovation and partnership

### Target 4.1: Telecommunication/ICT environment conducive to innovation

Target 4.1 aims to ensure a telecommunications/ICT environment that is conducive to innovation. Recent years have witnessed a rapid increase in the number of countries with a national innovation strategy.

### Target 4.2: Effective partnerships between stakeholders in the telecommunication/ICT environment

Target 4.2 concerns stakeholder partnerships. New indicators for innovation are being developed, which can be assessed alongside established indicators from other sources.

## ITU Sector and Intersectoral Objectives

### 3 ITU-R objectives and results achieved (Radiocommunication Sector)

ITU-R Objectives		
<b>R.1</b> Meet, in a rational, equitable, efficient, economical and timely way, the ITU membership's requirements for radio-frequency spectrum and satellite-orbit resources, while avoiding harmful interference	<b>R.2</b> Provide for worldwide connectivity and interoperability, improved performance, quality, affordability and timeliness of service and overall system economy in radiocommunications, including through the development of international standards	<b>R.3</b> Foster the acquisition and sharing of knowledge and know-how on radiocommunications

Objective R.1: Meet, in a rational, equitable, efficient, economical and timely way, the ITU membership's requirements for radio-frequency spectrum and satellite-orbit resources, while avoiding harmful interference

#### Outcomes:

**R.1-1:** Increased number of countries having satellite networks and earth stations recorded in the Master International Frequency Register (MIFR)

**R.1-2:** Increased number of countries having terrestrial frequency assignments recorded in the MIFR

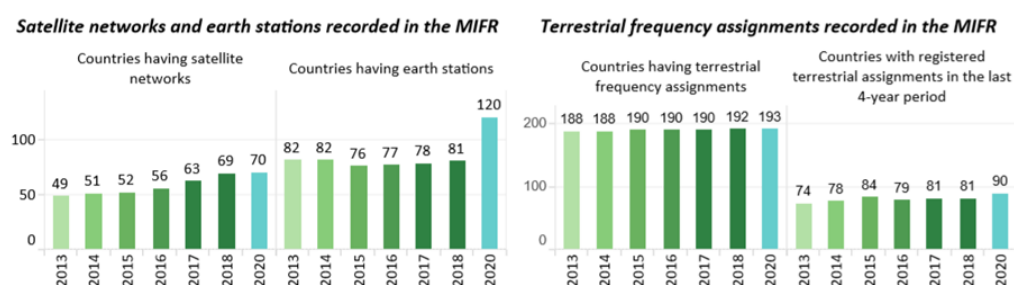
**R.1-3:** Increased percentage of assignments recorded in the MIFR with favourable finding

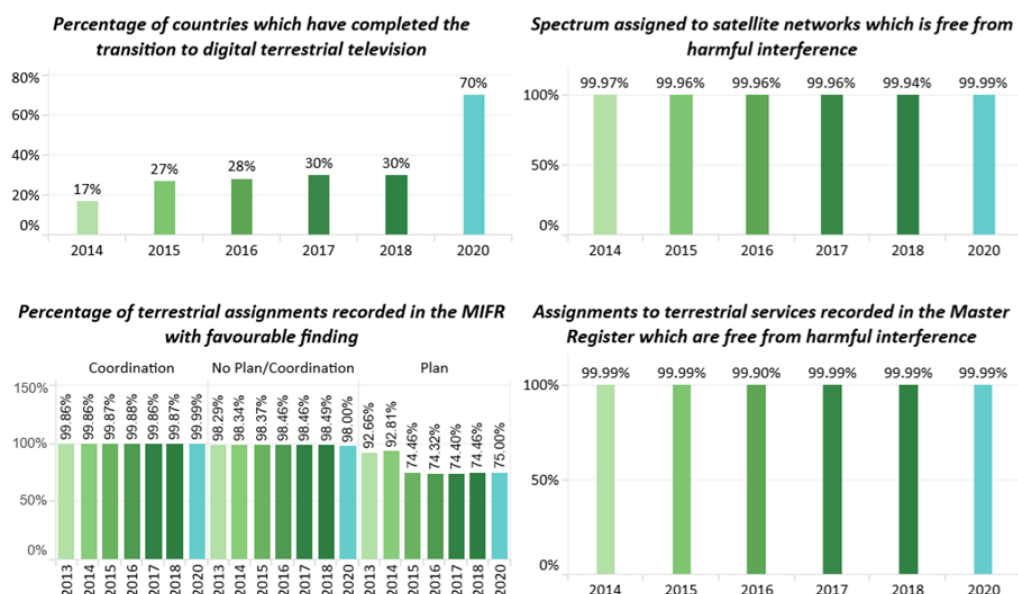
**R.1-4:** Increased percentage of countries which have completed the transition to digital terrestrial television broadcasting

**R.1-5:** Increased percentage of spectrum assigned to satellite networks which is free from harmful interference

**R.1-6:** Increased percentage of assignments to terrestrial services recorded in the MIFR which are free from harmful interference

#### Progress achieved





## Outputs

### R.1-1 Final acts of world radiocommunication conferences, updated Radio Regulations (overview of the Activities for each Output)

The World Radiocommunication Conference 2015 (WRC-15) made several decisions that are reflected in the updated Radio Regulations (Edition of 2016) or recorded in the minutes of its plenary sessions.

Significant progress was made on the ITU-R preparatory studies for WRC-19 and preliminary studies for WRC-23. The second session of the Conference Preparatory Meeting (CPM19-2), held in February 2019, allowed for the completion of the CPM Report to WRC-19. This Report will serve as a technical and regulatory basis for the preparation of the conference, which will address, *inter alia*, the following topics:

- International Mobile Telecommunications (IMT)<sup>2</sup>
- Earth stations in motion<sup>3</sup>
- Non-geostationary systems in the fixed-satellite service<sup>4</sup>
- High-altitude platform stations (HAPS)<sup>5</sup>
- Wireless Access Systems including radio local area networks (WAS/R-LAN)<sup>6</sup>
- Intelligent Transport Systems (ITS)<sup>7</sup>
- Meteorological-satellite and Earth exploration-satellite services<sup>8</sup>

### R.1-2 Final acts of regional radiocommunication conferences, regional agreements

No regional radiocommunication conferences were organized during the considered period.

<sup>2</sup> WRC-15 Res. 238; WSIS Action Lines C2, C3, C7; SDG Targets 1.4, 3.8, 4.2, 4.3, 4.7, 5.b, 8.1, 8.2, 9.1, 9.3, 9.c, 10.2, 11.2, 13.1, 13.3, 16.7, 16.10

<sup>3</sup> WRC-15 Res. 158; WSIS Action Lines C2; SDG Target 9.c

<sup>4</sup> WRC-15 Res. 159; WSIS Action Lines C2; SDG Target 9.c

<sup>5</sup> WRC-15 Res. 160; WSIS Action Lines C2; SDG Target 9.c

<sup>6</sup> WRC-15 Res. 239; WSIS Action Lines C2, C3, C7; SDG Targets 3.8, 4.2, 4.3, 4.7, 5.b, 8.1, 8.2, 9.c, 10.2, 16.7, 16.10

<sup>7</sup> WRC-15 Res. 237; WSIS Action Lines C2, C3, C7; SDG Targets 3.6, 9.5, 9.c, 11.2

<sup>8</sup> WRC-15 Res. 766; WSIS Action Lines C2, C3, C7; SDG Targets 1.5, 2.4, 3.9, 11.5, 11.b, 13.1, 13.3, 13.b, 14.1, 14.2

### R.1-3 Rules of Procedure adopted by the Radio Regulations Board (RRB)

The RRB met three times in 2018. The RRB adopted (RoPs) decisions made by WRC-15 and to the Bureau's practices in the application of the Radio Regulations and Regional Agreements. These were published as two updates to the 2017 edition of the RoPs.

### R.1-4 Results of the processing of space notices and other related activities<sup>9</sup>

Year	Coordination and notification requests / corresponding number of assignments in unplanned bands	Requests for broad-casting-satellite and associated feeder links Plans / corresponding number of assignments	Requests for fixed-satellite service Plan / corresponding number of assignments
2016	1267/414 865	100/25 484	84/4 087
2017	1186/1 017 489	79/45 522	55/1 692
2018	957/887 216	135/69 107	89/1 617
Total 2016-2018	12 010/2 319 570	314/140 113	228/7 396

### R.1-5 Results of the processing of terrestrial notices and other related activities in 2018<sup>10</sup>

Notices recorded in the MIFR/Plans	79 134/ 2 798
Review of findings for terrestrial stations recorded in the MIFR	210
Notifications of coast and ship stations for recording in the ITU maritime database	614 627
High-frequency broadcasting requirements	31 215
Monitoring observations concerning the monitoring programme at 2 850- 28 000 kHz and 406-406.1 MHz	28 130
Reports of harmful interference	1 096

### R.1-6 RRB decisions other than the adoption of Rules of Procedure

RRB decisions taken in 2018 on specific cases of satellite networks are summarized in the following table.

<sup>9</sup> Art. 12 of the CV; Council Dec. 482; Articles 9, 11, 13, 14, 15, 21 and 22, Appendices 4, 5, 7, 8, 30, 30A, 30B of the RR; Res. 4 (Rev.WRC-03), 49 (Rev.WRC-15), 55 (Rev.WRC-15), 85 (WRC-03), 148 (Rev.WRC-15), 539 (Rev.WRC-15), 552 (Rev.WRC-15), 553 (Rev.WRC-15); WSIS AL C2; SDG Target 9.c

<sup>10</sup> Art. 12 of the CV; Art. 9, 11, 12, 13, 14, 15, 16, 19, 20, 21, 23, 24, 27, 28, 43, 50, 51, 52, 56, 58, Appendices 4, 5, 17, 25, 26, 27 of the RR; Res. 1 (Rev.WRC-97), 12 (Rev.WRC-15), 13 (Rev.WRC-97), 122 (Rev. WRC-07), 205 (Rev.WRC-15), 207(Rev.WRC-15), 331 (Rev.WRC-12), 339 (Rev.WRC-07), 356 (Rev.WRC-07), 417 (Rev. WRC-15), 424 (WRC-15), 535 (Rev.WRC-15), 612(Rev.WRC-12), 647(Rev.WRC-15), 749 (Rev.WRC-15), 760 (WRC-15), 906 (Rev.WRC-15); Regional Agreements ST61, GE75, RJ81, GE84, GE85-M, GE85-N and GE06; WSIS ALC2; SDG Target 9.c

Extension of the regulatory deadlines of satellite networks	Cases referred to WRC while continuing to take into account the satellite network	Maintain satellite networks in or suppress them from the MIFR	Resubmission of satellite networks	Reinstatement or re-examination of satellite networks with unchanged date of receipt	Transfer of a satellite network to another notifying administration
5 cases accepted, (2 for <i>force majeure</i> , 2 for co-passenger delay, 1 case of delay in submission of due diligence information), 1 case of co-passenger delay rejected	2 cases referred to WRC-19 (1 satellite network brought into use, but affect allotment under Art. 6 of Appendix 30B, 1 for suppression under No. 13.6)	1 case maintained 2 cases suppressed	1 case accepted 1 case noted	1 case accepted (related to Appendix 30B)	-

The RRB repeatedly reviewed the longstanding situation of harmful interference caused by Italian television and sound broadcasting stations in the VHF and UHF bands to its neighbouring countries. The television situation has significantly improved with only a few remaining cases of harmful interference needing to be resolved. Furthermore, the Italian Administration provided a road map for resolving these cases to a list of priority sound broadcasting stations.

The RRB also regularly reviewed the harmful interference caused by the Iridium satellite network (HIBLEO-2) to the radio astronomy service (RAS) in the band 1 610.6 – 1 613.8 MHz. Resolution of this issue is expected at the end of 2018 once the new constellation of Iridium satellites becomes fully operational.

The RRB reviewed a case of reported harmful interference to coordinated emissions from HF broadcasting stations of the United Kingdom. The administrations involved were requested to continue efforts to coordinate and suppress the harmful interference.

The RRB received two requests to review cases on the application of CS Article 48 to the operation of certain satellite networks. The RRB recognized that it was not within its mandate to make decisions with reference to CS Article 48. However, the RRB drew attention to the importance of the administrations observing provision 3 of CS Article 48.

### R.1-7 Improvement of ITU-R software

In 2018, the Bureau continued to develop software applications and databases to enable efficient and timely processing of notices and to facilitate the use of ITU-R outputs by the ITU membership.

Activities for space applications resulted in the following achievements:<sup>11</sup>

- Delivery of new and updated versions of the reference databases.
- Migration of several software applications from Ingres to SQL Server.
- Development of a secure communications system with and among administrations, in response to Resolution 907 (Rev. WRC-15), with expected delivery in 2019.
- Delivery of the e-Submission of Satellite Network Filings web application, in response to Resolution 908 (Rev. WRC-15).
- Delivery of the Space Interference Reporting and Resolution System (SIRRS), in response to Resolution 186 (PP-14).
- Delivery of new and improved versions of space services processing software for external use (BR IFIC (Space)).

<sup>11</sup> PP Res. 186, Art. 12 of the CV, Art. 9, 11, 13, 14, 15, 21, Appendices 4, 5, 7, 8, 30, 30A, 30B of the RR, 907 (Rev. WRC-15), 908 (Rev. WRC-15); RRB RoP; RAG Advice to the Director; WSIS Action Line C2; SDG Targets 1.4, 9.c, 17.7, 17.8, 17.9, 17.16

For terrestrial services, these activities resulted in the following achievements: (see Note 10)

- Delivery of new and updated versions of reference data and the associated validation software for terrestrial frequency notifications, in accordance with Appendix 4 of the Radio Regulations.
- The finalization of the integration of the software processing modules for the Article 4 of the GE06 agreement with all its components (analogue, digital, other primary services) in TerRaSys. Full operational integration is expected during the first quarter of 2019.
- Continuation of the migration from Ingres to SQL server of various databases and software modules used in the processing of terrestrial frequency notifications.
- Revised algorithm for the examination of terrestrial frequency notifications under No. RR 9.19 with regards to the frequency bands shared with the broadcasting-satellite service, in accordance with the relevant rule of procedure.
- Completion of the testing of software implementation for the technical examination aiming to determine the coordination requirements of terrestrial frequency notifications under No. RR 9.21.
- From 1 January 2019, replacement of the publication of HF Broadcasting Schedules and compatibility results on CD-ROM by a free, online database.
- Completion of the software for compatibility analysis of digital television broadcasting for the Central America and the Caribbean region with the integration of the module dealing with fixed and mobile services.
- Further enhancement of eBCD2.0 platform for terrestrial broadcasting services by enabling field strength coverage calculations under the propagation prediction method of ITU-R P. 1812
- Commencement of the project on establishing a common BR geographic information systems platform and data, with a focus on open source tools.

The Bureau also continued to improve the security aspects of its databases and software applications, including disaster recovery and business continuity procedures, isolation and protection from outside exposure.

In addition, the Bureau maintained the application tools which were previously made available to the membership:

- The ITU Radio Regulations Navigation Tool, with updated data to include the most recent versions of the rules of procedures and the relevant ITU-R Recommendations.
- The tool on the Table of Frequency Allocations of Article 5 of the Radio Regulations for use in preparations for WRCs and national spectrum management.



## Objective R.2: Provide for worldwide connectivity and interoperability, improved performance, quality, affordability and timeliness of service and overall system economy in radiocommunications, including through the development of international standards

### Outcomes:

R.2-1: Increased mobile-broadband access, including in frequency bands identified for international mobile telecommunications (IMT)

R.2-2: Reduced mobile-broadband price basket, as a percentage of gross national income (GNI) per capita

R.2-3: Increased number of fixed links and increased amount of traffic handled by the fixed service (Tbit/s)

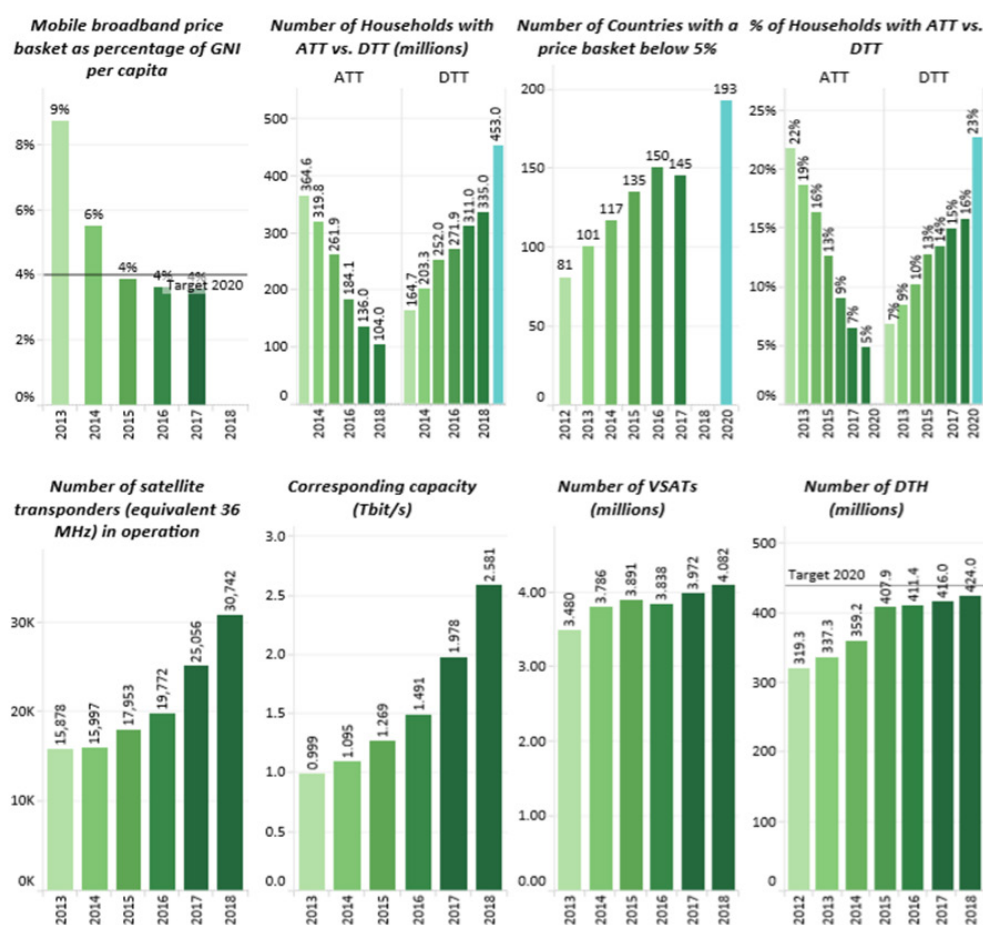
R.2-4: Number of households with digital terrestrial television (DTT) reception

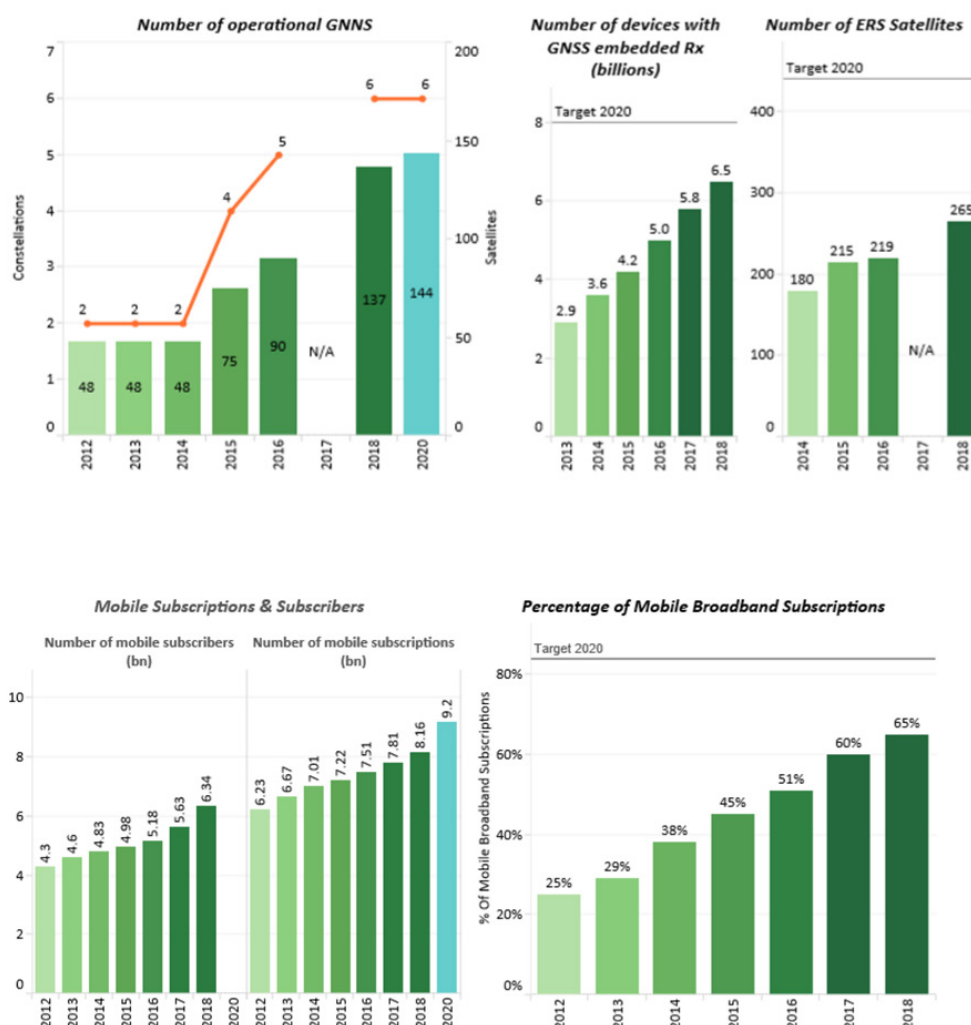
R.2-5: Number of satellite transponders (equivalent 36 MHz) in operation and corresponding capacity (Tbit/s); Number of VSAT terminals; Number of households with satellite television reception

R.2-6: Increased number of devices with radionavigation-satellite reception

R.2-7: Number of Earth exploration satellites in operation, corresponding quantity and resolution of transmitted images and data volume downloaded (Tbytes)

### Progress achieved





## Outputs

### R.2-1 Decisions of the Radiocommunication Assembly, ITU-R resolutions

The last Radiocommunication Assembly was held in 2015 (RA-15) and its decisions and notable ITU-R Resolutions were reported to Council 2017 (see Council 2017 [Doc. 35](#)).

In 2018, the ITU-R Study Groups continue to carry out studies in accordance with the working methods revised at RA-15 and in response to the ITU-R Resolutions and ITU-R Questions approved prior to or at this 2015 Assembly.

Significant progress was also made on the ITU-R preparatory studies for the World Radiocommunication Conference 2019 (WRC-19), in response to Resolution ITU-R 2-7 and the relevant WRC resolutions.

In 2018, new ITU-R Questions have also been developed and were approved in early 2019 on:

- Use of Artificial Intelligence (AI) for broadcasting;
- Coexistence analysis between foreign object debris detection systems operating in the frequency range 92 to 100 GHz and earth exploration satellite service sensors in-band and in adjacent bands.

In 2018, the ITU-R Study Groups also continued their preparation for the next Radiocommunication Assembly (RA-19) which will be held in Sharm el-Sheikh (Egypt) from 21 to 25 October 2019 just prior to WRC-19. The RA-19 decisions and ITU-R Resolutions will be reported to the next session of the Council.

## R.2-2 ITU-R recommendations, reports (including the CPM report) and handbooks

In 2018, ITU-R approved 41 new or revised ITU-R Recommendations and 51 new or revised ITU-R Reports. ITU-R also developed 24 new or revised ITU-R Recommendations which were approved in early 2019. In addition, a 780-page English draft of the Conference Preparatory Meeting (CPM) Report to WRC-19 was developed for consideration at the second session of the CPM-19 (CPM19-2) in February 2019.

The table below summarizes the ITU-R study groups outputs in terms of Recommendations and Reports approved at or following their meetings in 2018.

Subject	New or revised ITU-R Recommendations approved	New or revised Reports approved
<b>International Mobile Telecommunications (IMT)</b> vision, frequency arrangements, radio interface, spectrum sharing and global circulation of terminals, enabling global mobile broadband development.	M.1457-4	M.2373-1, M.2440-0, M.2441-0
<b>Maritime and aeronautical systems</b> operational characteristics, identities and protection, including wireless avionics and global flight tracking.	M.493-15, M.2010-1, M.2121-0, M.2122-0	M.2436-0, M.2443-0
<b>Land mobile communications, including</b> cognitive radio systems, broadband wireless, railway communication and <b>Intelligent Transport Systems (ITS)</b> radio interface standards.	M.1890-1, M.2120-0	M.2442-0, M.2444-0, M.2445-0
<b>Television and sound</b> signals coding, production, exchange and broadcasting for HDTV, UHDTV and 3D, and sharing of broadcasting with other services, laying the foundation of the development of advanced television and sound technologies.	<b>Sound:</b> BS.1196-7, BS.1284-2, BS.1548-6, BS.2051-2 and BS.2125-0 <b>Television:</b> BT.814-4, BT.1122-3, BT.1366-3, BT.1702-1, BT.1872-2, BT.2054-1, BT.2055-1, BT.2075-2, BT.2100-2, BT.2123-0 and BT.2124-0	<b>Sound:</b> BS.2388-3, BS.2419-0, BS.2433-0 and BS.2434-0 <b>Television:</b> BT.2140-11, BT.2207-4, BT.2245-4&5, BT.2267-8, BT.2342-1&2, BT.2343-3, BT.2344-2, BT.2380-2, BT.2390-4&5, BT.2400-1&2, BT.2408-1, BT.2420-0 and BT.2432-0
<b>Fixed communications</b> technical and operational characteristics, channelling arrangements and spectrum sharing for radio-relays and fixed wireless access.	F.1245-3, F.1336-5, F.2119-0	M.2435-0, F.2437-0, F.2438-0, F.2439-0

Subject	New or revised ITU-R Recommendations approved	New or revised Reports approved
<b>Radars</b> technical and operational characteristics, protection, including aeronautical, meteorological and automotive radars.	M.1462-1	
<b>Search and rescue</b> , Public Protection and Disaster Relief (PPDR) radio interface standards, frequency arrangements and provision of services, enabling global harmonization.	F.1105-4, M.1637-1, M.2009-2	
<b>Propagation</b> measurement, data analysis, modelling and prediction in various parts of the spectrum up to 375 THz, laying the foundation for the design of radiocommunication systems and the assessment of interference.	P.526-14	
<b>Earth exploration-satellite, Meteorological-satellite, Space Research and Radioastronomy services</b> characteristics, protection/sharing, including manned research, data relay, nano satellites, enabling prediction of weather, monitoring of Earth's resources and understanding of climate change.	M.1849-2 RS.1165-3, RS.1263-3 RS.1859-1, RS.1883-1, RS.2042-1 SA.364-6 SA.1163-3, SA.1164-3, TF.2118-0	RA.2189-1, RA.2428-0 RS.2431-0 SA.2425-0 SA.2426-0, SA.2427-0, SA.2429-0, SA.2430-0
<b>Spectrum Management</b> , including methods for identification and elimination of interference, data dictionary, spectrum redeployment, spectrum use measurement, unlicensed and shared uses of spectrum, dynamic spectrum access, smart grids and wireless power transmission.	SM.1051-4, SM.1896-1, SM.2117-0	SM.2012-6, SM.2093-3, SM.2211-2, SM.2356-2, SM.2421-0, SM.2422-0, SM.2423-0, SM.2424-0

No new or revised ITU-R handbooks were approved in 2018.

### R.2-3 Advice from the Radiocommunication Advisory Group

The Radiocommunication Advisory Group (RAG) held its annual meeting, where it reviewed the priorities and strategies adopted in the Sector. It provided guidance for the work of the Study Groups and recommended measures to foster cooperation and coordination with other organizations and other ITU Sectors.

The outputs of the RAG included<sup>12</sup> advice to the BR Director on financial matters related to the financing of RRB activities as well as BR activities, advice on further development of the BR information system and advice on the prioritization of documents for publication related to the CPM and WRC.

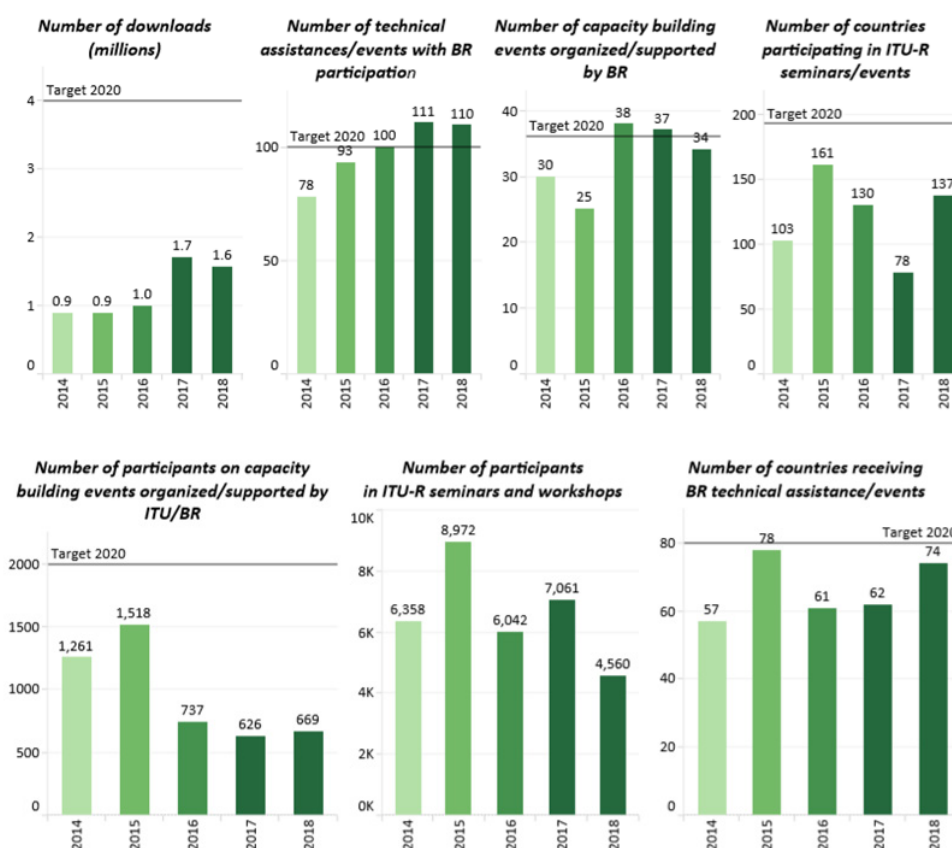
### Objective R.3: Foster the acquisition and sharing of knowledge and know-how on radiocommunications

#### Outcomes:

**R.3-1:** Increased knowledge and know-how on the Radio Regulations, Rules of Procedures, regional agreements, recommendations and best practices on spectrum use

**R.3-2:** Increased participation in ITU-R activities (including through remote participation), in particular by developing countries

#### Progress achieved



#### Outputs

##### R.3-1 ITU-R publications

During 2018, there were 1,347,766 downloads of ITU-R Recommendations (18 Series), 202,306 of ITU-R reports (13 Series); 13,019 downloads of ITU-R handbooks, the most popular of which was

<sup>12</sup> Art. 11A of the CV, Res. ITU-R 52; WSIS Action Line C2; SDG Target 9.c

the handbook on National Spectrum Management; 3,952 downloads of the Radio Regulations; and 3,535 downloads of the Rules of Procedure. These documents were downloaded from 166 countries around the world.

At this time, there are 1,181 ITU-R Recommendations in force, 557 ITU-R Reports in force and 42 ITU-R Handbooks published, of which 38 are in force, one is merged and three are suppressed, but are still available on ITU website.

### **R.3-2 Assistance to members, in particular developing countries and LDCs<sup>13</sup>**

The BR continues to pursue its objective of informing and assisting ITU membership, in particular in developing countries, on issues relating to radiocommunication matters. For this purpose, the BR organizes and participates in several spectrum related workshops, seminars, meetings and capacity-building activities. These actions are being carried out in close cooperation with the BDT and ITU regional and area offices and with relevant international organizations and national authorities.

During 2018, the most pertinent activities were:

- A series of regional frequency coordination meetings on the use of the VHF/UHF bands in the countries of the Central America and Caribbean region in collaboration with CITEL, COMTELCA and CTU. The whole process lasted 18 months and was finalized at the fourth meeting held in Belize from 11 to 14 September 2018 with the percentage of assignable channels for digital requirements more than 94 per cent in the UHF band and 96 per cent in the VHF band. The results are based on a minimum of 4 national layers (MUX) in UHF band and 1 or 2 layers (depending on a country) in VHF band for the administrations participating in the process.
- A multilateral coordination meeting between Italy and neighbouring countries to solve cases of harmful interference between FM broadcasting sound stations was held on 20 June 2018 with the Bureau's assistance.
- Four ITU/ITSO capacity-building workshops on satellite communications were organized in Dakar, Senegal, from 23 to 27 July 2018 (for French-speaking African countries), in Quito, Ecuador, from 10 to 14 September 2018, in Abuja, Nigeria, from 22 to 27 October 2018 (for English-speaking African countries) and in Rabat, Morocco, from 26 to 30 November 2018. These workshops were part of a capacity-building partnership between ITU and ITSO for the delivery of satellite communications related training. In addition, at the request of the notifying administrations, the Bureau hosted satellite coordination meetings at ITU Headquarters.
- An ITU regional workshop on "Furthering IMT Development: Policy, Spectrum Valuation and Auctions" in the Arab region, Riyadh, Kingdom of Saudi Arabia was held from 18 to 19 December 2018. The event was attended by more than 100 participants coming from 12 Arab countries.
- At the request of the Administrations, direct assistance was provided to several countries, including Bhutan, Dominican Republic, and El Salvador, to support their national spectrum management activities, long-term frequency management for mobile broadband, as well as transition to digital broadcasting and the allocation of the digital dividend.
- The Bureau also participated in the BDT assistance programme, which dealt with the development of regulations for maritime wireless communication for the Ministry of Communications and Information Technology (MCIT) of Indonesia.

### **R.3-3 Liaison/support to development activities<sup>14</sup>**

The Bureau maintained strong cooperation with international organizations such as the International Maritime Organization (IMO), the International Civil Aviation Organization (ICAO), the World

<sup>13</sup> Res. 9, 71; WSIS AL C2; SDG Targets 1.4, 9.c, 17.7, 17.8, 17.9, 17.16

<sup>14</sup> PP Res. 9, 71, 72; WSIS AL C11; SDG Targets 17.7, 17.8, 17.9, 17.16, 17.19

Meteorological Organization (WMO), the UN Office for Outer Space Affairs (UN-COPUOS), and regional and sub-regional organizations (including APT, ASMG, ATU, CEPT, CITEL, RCC, EBU, ABU, ESOA, IEC, GSMA, GSA, GVF, ICTO, ITSO, UNDAC, CTU, PITA, and CTO).

ITU-R maintained close liaison with standards-making bodies through participation in various forums such as Global Standards Collaboration (GSC), World Standards Collaboration (WSC), and 3rd-Generation Partnership Projects (3GPP).

Specific activities included:

- Contributions to the ITU Global Symposium for Regulators (GSR);
- Support to BDT in gathering ICT sector metric data, expanding on spectrum regulatory aspects through the ITU's ICT-Eye portal for data and statistics and development of relevant ICT definitions to measure the information society in areas specific to radiocommunications;
- Participation in the meetings of the Expert Group on Telecom-ICT Indicators (EGTI), and in the Ad Hoc Group, the development of a new set of indicators on IMT National Spectrum Allocations and Assignments;
- Implementation of the joint BR/BDT project regarding the Spectrum Management Training Programme (SMTP).

### R.3-4 Seminars, workshops and other events

During the period of 2018, the following World/Regional Radiocommunication Seminars were conducted:

- ITU Regional Radiocommunication Seminar 2018 for Asia and Pacific (RRS-18-Asia&Pacific) held in Thimphu, Bhutan from 23 to 28 July 2018, included a forum on "Radiocommunication Systems evolution: challenges and opportunities for the Region". The seminar gathered over 70 industry experts and stakeholders from 15 countries in the Asia-Pacific region.
- ITU Regional Radiocommunication Seminar 2018 for the Americas (RRS-18-Americas) held in San Jose, Costa Rica, from 24 to 28 September 2018, included a forum on "Spectrum Management: Challenges Ahead". The seminar gathered over 60 industry experts and stakeholders, from 13 countries and three international organizations from the Americas region.
- World Radiocommunication Seminar 2018 (WRS-18) was held in Geneva from 3 to 7 December. The event was attended by 485 participants from 98 Member States and 40 entities. WRS-18 focused on the regulatory aspects of the use of the radio-frequency spectrum and satellite orbits and the application of the provisions of the ITU Radio Regulations.

Support was also provided to other ITU seminars related to topics such as spectrum management, space radiocommunication applications, WRC-19 preparation and so on. Some relevant events during 2018 were:

- ITU WRC-19 Regional Workshop for Region 2, 21-23 March, Havana, Cuba.
- ITU Regional Seminar for CIS and Europe "Development of modern radiocommunication ecosystems", 6-8 June 2018, St. Petersburg, Russian Federation.
- ITU Satellite Symposium, 28-30 November, Geneva, Switzerland.
- ITU Regional Workshop on "Furthering IMT Development: Policy, Spectrum Valuation and Auctions in the Arab Region", 18-19 December, Riyadh, Kingdom of Saudi Arabia.

Events organized within ITU-R can be found at: <http://www.itu.int/ITU-R/go/seminars>.

## 4 ITU-T objectives and results achieved (Telecommunication Standardization Sector)

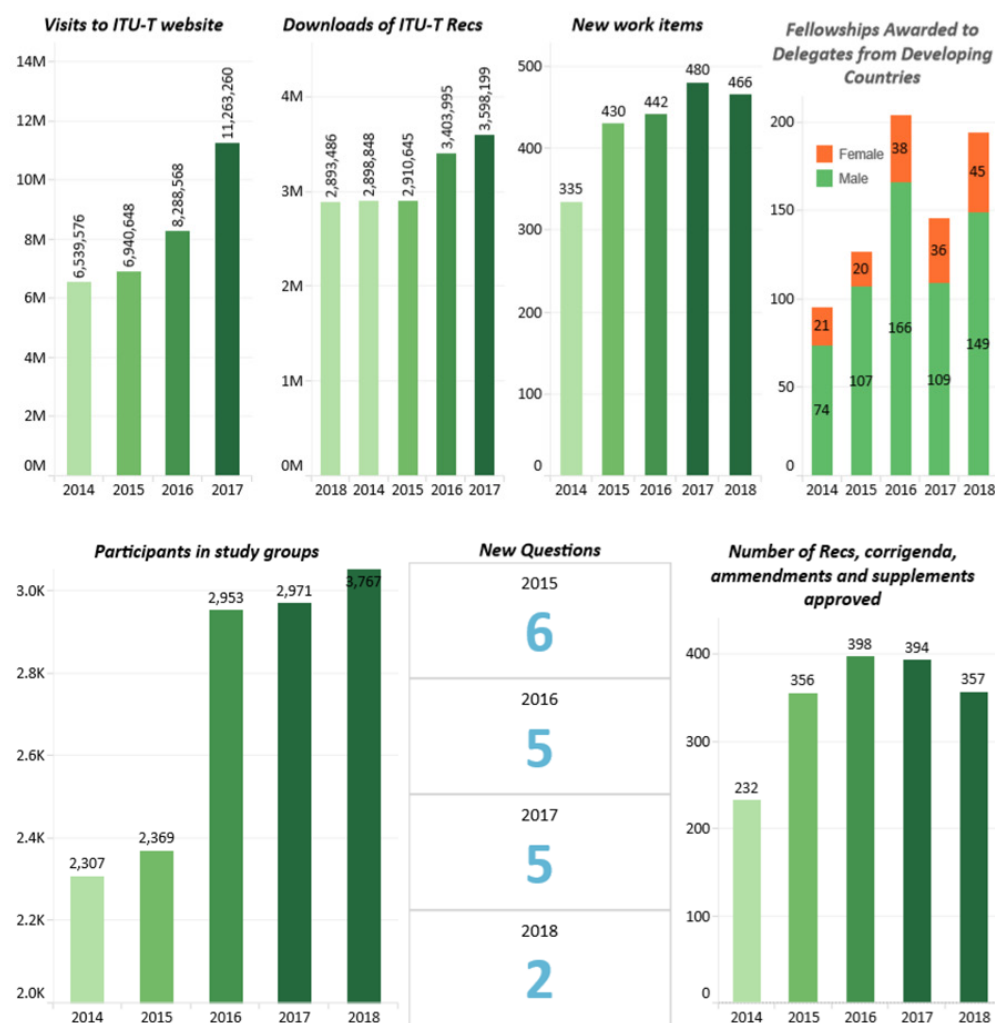
ITU-T Objectives				
T.1 Develop non-discriminatory international standards (ITU-T recommendations), in a timely manner, and foster interoperability and improved performance of equipment, networks, services and applications	T.2 Promote the active participation of the membership, in particular developing countries, in the definition and adoption of non-discriminatory international standards (ITU-T recommendations) with a view to bridging the standardization gap	T.3 Ensure effective allocation and management of international telecommunication numbering, naming, addressing and identification resources in accordance with ITU-T recommendations and procedures	T.4 Foster the acquisition and sharing of knowledge and know-how on the standardization activities of ITU-T	T.5 Extend and facilitate cooperation with international, regional and national standardization bodies

**Objective T.1: Develop non-discriminatory international standards (ITU-T recommendations), in a timely manner, and foster interoperability and improved performance of equipment, networks, services and applications**

Outcomes:
T.1-1: Increased utilization of ITU-T recommendations
T.1-2: Improved conformance to ITU-T recommendations
T.1-3: Enhanced standards in new technologies and services



## Progress achieved



## Outputs

### T.1-1 Resolutions, recommendations and opinions of the World Telecommunication Standardization Assembly (WTSA)

Progress meeting the directives of WTSA is documented in the WTSA-16 Action Plan.

### T.1-2 WTSA regional consultation sessions<sup>15</sup>

An ATU Workshop on the implementation of WTDC-17 and PP-18 outcomes and the first African Preparatory Meeting for WTSA-20 took place in Rabat, Kingdom of Morocco, from 4 to 7 March 2019.

<sup>15</sup> WTSA Res. 43; WSIS Action Lines C3, C11; SDG Targets 10.6, 17.6

### T.1-3 Advice and decisions of Telecommunication Standardization Advisory Group (TSAG)

The December 2018 TSAG<sup>16</sup> meeting created a new Rapporteur Group on Regional Groups (TSAG RG-CPTRG). The total number of TSAG Rapporteur Groups is now seven.

TSAG approved the establishment of the Standardization Programme Coordination Group (SPCG),<sup>17</sup> convened by the IEC Standardization Management Board, ISO Technical Management Board and ITU-T TSAG, for the strategic coordination of existing and future standardization work as well as related short-term tasks identified by the SPCG and approved by the technical boards of IEC, ISO and ITU-T.

In December 2018, TSAG TAP-determined<sup>18</sup> revised Recommendations ITU-T A.1, A.5, A.13, and A.25 for Member State consultation.

The December 2018 TSAG meeting report can be found in [TSAG R3](#).

### T.1-4 ITU-T recommendations and related results of ITU-T study groups

ITU-T [approved](#) more than **150 new and revised ITU standards (ITU-T Recommendations)**<sup>19</sup> during the reporting period. The following provides a sample of high-priority ITU standardization projects and recently approved ITU-T Recommendations.

Membership continues to assign high priority to ITU-T standardization work on the non-radio elements of IMT-2020 (5G) systems. Software-driven network management and orchestration continues to transform telecom operations. ITU-T's 5G work is supporting this transformation with the development of new standards for networking innovation, the evolution of the transport network and environmental sustainability.

The Joint Video Experts Team – a collaborative team formed by the ITU-T Study Group 16 Video Coding Experts Group and ISO/IEC JTC1 SC29/WG11 (Moving Picture Experts Group, MPEG) – is reporting strong progress in developing a new video coding standard to be known as “Versatile Video Coding” (VVC). The primary objective of VVC is to provide a significant improvement in compression performance over the existing ‘High Efficiency Video Coding’ standard (HEVC, published as ITU-T H.265 | ISO/IEC 23008-2).

Quantum information technologies including quantum key distribution and quantum-safe communications are new study areas being tackled by ITU-T, motivating seven companies and two universities with expertise in the field to join ITU-T as members.

New ITU-T Recommendations address radio over fibre; multivendor interoperable 100G coherent DWDM (dense wavelength division multiplexing) line interfaces; low-cost optical fibre cable installation in remote areas, in particular for developing countries; software-defined networking in transport networks; visible light communications; and synchronization for IMT-2020/5G. Revised ITU-T Recommendations address broadband access over metallic conductors, optical broadband access, and Optical Transport Network interfaces beyond 100 Gbit/s.

ITU-T collaboration with WHO has resulted in the delivery of a new ITU-T Recommendation providing “Guidelines for safe listening devices/systems”, which was also [adopted by WHO](#). The standard is accompanied by an ITU-WHO “Safe Listening Toolkit” developed by WHO, BDT and TSB. The standard and toolkit were developed in support of the WHO “Make Listening Safe” initiative.

A new ITU-T Recommendation addressing “Audio-based indoor and outdoor network navigation system for persons with vision impairment” details such systems’ requirements and functionality.

<sup>16</sup> WTSA Resolution 22

<sup>17</sup> WTSA Resolution 7; WSIS Action Line C11; SDG Target 17.6

<sup>18</sup> WTSA Resolution 1

<sup>19</sup> WSIS Action Lines C2, C5, C6.

The standard is complemented by a conformance testing specification and online training course developed by Wayfindr together with TSB and BDT, which is now available from the [ITU Academy](#).

A new ITU-T Recommendation provides a framework for solutions to combat counterfeit ICT devices. This area of work continues to accelerate and was expanded to combat counterfeiting as well as the theft of mobile devices. Renewed emphasis has been placed on addressing concerns surrounding the tampering with or cloning of ICT device identifiers.

Two new ITU-T Recommendations aim to overcome the security limitations of passwords, addressing biometric authentication on mobile devices and the use of external authenticators, such as mobile devices, to authenticate Web users. The specifications were submitted to ITU by the FIDO Alliance (“Fast Identity Online”), an industry consortium focused on developing open specifications for interoperable strong user authentication leveraging public key cryptography.

The ITU-T Focus Group on “Machine Learning for Future Networks including 5G” has finalized its first deliverable providing an architectural framework for machine learning in future networks including IMT-2020. The deliverable is now under approval as a new ITU-T Recommendation.

New ITU-T Recommendations in the field of environment and circular economy include methodologies to assess the environmental impact of the ICT sector; guidelines to protect telecommunication equipment from electromagnetic and particle radiations; requirements for sustainable and intelligent building services; and guidelines on the reduction of e-waste.

New ITU-T Recommendations in the field of the Internet of Things (IoT) and smart cities and communities include a framework to assess the impacts of digital innovation on the economic, social and environmental challenges faces by cities; the requirements and reference model of IoT-related crowdsourced systems; accessibility requirements specific to IoT applications and services; IoT descriptions to enable effective discovery, interpretation and use of IoT resources; and a framework for wireless power transmission.

New ITU-T Recommendations in the field of performance, quality of service (QoS) and quality of experience (QoE) include considerations for realizing virtual measurement systems; guidelines concerning the factors impacting end-to-end QoS for video telephony over 4G mobile networks; and subjective test methodologies for assessing the impact of initial loading delay on user experience and evaluating speech-oriented stereo communication systems over headphones.

#### T.1-5 ITU-T general assistance and cooperation

ITU continues to provide leadership in building cooperation among the many interests served by ICT standardization.

The **World Standards Cooperation (WSC)** is a partnership of ITU, ISO and IEC to promote international standards.<sup>20</sup> WSC led the celebration of World Standards Day 2018 (14 October 2018), themed “International Standards and the 4th Industrial Revolution”.

**ITU is a strong advocate of “Universal Design”** and has developed standardization guidelines to produce solutions that are inherently accessible to persons with and without disabilities.<sup>21</sup>

**ITU’s Bridging the Standardization Gap (BSG) programme** improves the capacity of developing countries to participate in the development and implementation of international ICT standards.<sup>22</sup>

<sup>20</sup> WTSA Resolution 7; WSIS Action Line C3; SDG Targets 9.1, 9.4, 9.8

<sup>21</sup> WTSA Resolutions 2, 70; WSIS Action Line C3; SDG Target 10.2

<sup>22</sup> WTSA Resolution 44; WSIS Action Line C4; SDG Targets 9.5, 10.6, 17.6, 17.9

**ITU's Conformity and Interoperability (C&I) programme** is particularly valuable to developing countries in their efforts to improve conformance with ITU-T Recommendations.<sup>23</sup>

**Chief Technology Officer meetings:** CTO and CxO meetings bring together industry executives to highlight their business priorities and support standardization strategies.<sup>24</sup> The annual CTO meeting<sup>25</sup> was held in Durban, South Africa, 9 September 2018, in conjunction with ITU Telecom World 2018.

**e-Health:** ITU-T continues its longstanding collaboration with bodies active in the healthcare field, supporting the development of medical-grade e-health devices. Participating organizations include UN bodies, standards bodies, academic and research institutes and industry associations. The ITU-T Focus Group on "Artificial Intelligence for Health" works in partnership with the WHO towards a common methodology for the assessment of AI4H solutions.

**Safe listening of music players:** ITU-T collaboration with WHO has resulted in the delivery of a new ITU-T Recommendation providing "Guidelines for safe listening devices/systems" and associated ITU-WHO "Safe Listening Toolkit" in support of the WHO "Make Listening Safe" initiative.<sup>26</sup>

**Intelligent transport systems (ITS):** The [Collaboration on ITS Communication Standards](#) is a body responsible for the coordination of technical standardization work to encourage the offer of interoperable ITS products.<sup>27</sup> The ITU-T Focus Group on "Vehicular Multimedia" is analysing and identifying gaps in the vehicular multimedia standardization landscape and with a view to drafting technical reports and specifications covering areas including vehicular multimedia use cases, requirements, applications, interfaces, protocols, architectures and security. ITU-T Study Group 16 agreed in March 2019 to create a Joint Project Team with ISO/IEC ISO/TC22/SC31/WG8 to work on a "vehicle domain service" specification, leveraging the expertise of both groups as well as the focus group.

The **Financial Inclusion Global Initiative (FIGI)** – led by ITU, the World Bank Group and CPMI, with support from the Bill & Melinda Gates Foundation – is a three-year programme to advance research in digital finance and expand financial inclusion in developing countries. The second FIGI Symposium was held in Cairo, Egypt, 22 to 24 January 2019.

**ITU/WMO/UNESCO-IOC Joint Task Force on SMART Cable Systems** is leading a project to equip submarine communications cables with climate and hazard-monitoring sensors.

**ICT, environment and circular economy:** ITU-T maintains cooperation with bodies active in environmental sustainability. Participating organizations include UN bodies, standards bodies, regional organizations, academic and research institutes and industry associations.<sup>28</sup>

**Identity management:** TSB participated in the ID2020 Summit 2018 in New York, United States, 14 September 2018, with a view to exploring the potential for future ITU collaboration<sup>29</sup> with the ID2020 alliance.

**Network 2030:** The ITU-T Focus Group on "Technologies for Network 2030" (FG NET-2030) is studying novel forward-looking scenarios, such as holographic-type communications, extremely fast response to critical situations and high-precision communication demands of emerging market verticals, with a view to proposing the kinds of network architecture and enabling mechanisms necessary to such scenarios.

**Smart Sustainable Cities:** Coordinated by ITU, UNECE and UN-Habitat and supported by another 13 UN bodies, the United for Smart Sustainable Cities (U4SSC) initiative advocates for ICTs – and

<sup>23</sup> WTS Resolution 76; WSIS Action Line C2; SDG Targets 9.C, 17.6

<sup>24</sup> WTS Resolution 68; WSIS Action Lines C1, C2, C11; SDG Targets 9.C, 17.6

<sup>25</sup> WTS Resolution 68; WSIS Action Lines C1, C2, C11; SDG Targets 9.C, 17.6

<sup>26</sup> WTS Resolution 78; WSIS Action Line 7; SDG Targets 3.6, 3.8

<sup>27</sup> WSIS Action Line C11; SDG Target 17.6

<sup>28</sup> WTS Resolutions 2, 73, 79; WSIS Action Lines C7 e-environment, C11; SDG Targets 1.5, 2.4, 6.4, 7.3, 7.a, 7.b, 9.4, 9.a, 9.c, 11.b, 13.1, 13.2, 13.3, 13.b, 17.7, 17.14

<sup>29</sup> WSIS Action Line C11; SDG Targets 16.9, 17.6

ICT standards in particular – to play a definitive role in the transition to smart sustainable cities. The collaboration encouraged by the initiative has led more than 50 cities to evaluate their progress in meeting the objectives of their smart city strategies using “Key Performance Indicators for Smart Sustainable Cities” based on ITU-T Recommendations. ITU case studies share insight into the evaluations undertaken by Dubai, Singapore, and Moscow.<sup>30</sup>

#### T.1-6 Conformity database

The “**ICT Product Conformity Database**” enables industry to publicize the conformance of ICT products and services with ITU-T Recommendations, assisting users in their efforts to select standards-compliant products. Five categories of products and services have been submitted to the database:

- **e-Health solutions** complying with the specifications of Recommendation ITU-T H.810 “Interoperability design guidelines for personal health systems”, a transposition of the Continua Design Guidelines. The testing procedures are specified in the ITU-T H.820-H.850 sub-series of Recommendations.<sup>31</sup>
- **Mobile phones** compatible with Bluetooth-enabled vehicle hands-free terminals. This compatibility is determined in accordance with the “Chapter 12 tests” (“Verification of the transmission performance of short-range wireless (SRW) transmission enabled phones”) of ITU-T P.1100 and ITU-T P.1110.<sup>32</sup>
- **Ethernet products** complying with ITU-T G.8011/Y.1307 “Ethernet Services Characteristics”. This standard and the corresponding tests are based on the work of MEF (formerly called the Metro Ethernet Forum).<sup>33</sup>
- **IPTV systems** compatible with Recommendations ITU-T H.721 “IPTV terminal devices: Basic model” and ITU-T H.702 “Accessibility profiles for IPTV systems” tested at an ITU test event in May 2017. The testing procedures are specified in the ITU-T Technical papers HSTP-CONF-H721 and HSTP-CONF-H702 respectively.<sup>34</sup>

**Mobile Number Portability systems** compatible with ITU-T Q. Supplement 4 “Number portability – Capability set 1 requirements for service provider portability (All call query and Onward routing)”. The testing procedures are specified in the Recommendation ITU-T Q.3905.<sup>35</sup>

#### T.1-7 Interoperability test centres and events

ITU-T CASC (Conformity Assessment Steering Committee) is in the process of developing a third guideline, the “ITU-T CASC collaboration procedure with IECEE for TL recognition service on ITU-T Recommendations”, with an anticipated agreement date of October 2019.<sup>36</sup>

In March 2019, ITU-T CASC started the process of appointing ITU-T technical experts following procedures defined in the relevant guideline. Following the review of applications, appointments will be announced at the next meeting of ITU-T CASC.

ITU-T CASC continues its collaboration with existing conformity assessment Systems and schemes such as IEC and ILAC. The Certification Management Committee (CMC) of IEC has established an IECEE Task Force on “ITU requirements” which finalized the draft Operational Document (OD) “ICT Laboratory Recognition Service on ITU-T Recommendations”. The OD is expected to become a dedicated testing laboratory recognition procedure, established by IECEE following the anticipated approval of the OD

<sup>30</sup> WTS Resolution 98; WSIS Action Line C7 (e-environment); SDG Targets 11.3, 11.6, 11.a, 11.b.

<sup>31</sup> WTS Resolutions 2, 76, 78; WSIS Action Lines C7 e-health, C11; SDG Target 3.8

<sup>32</sup> WTS Resolutions 2, 76; WSIS Action Lines C2, C6; SDG Targets 9.1, 9.C

<sup>33</sup> WTS Resolutions 2, 76; WSIS Action Lines C2, C6; SDG Targets 9.1, 9.C

<sup>34</sup> WTS Resolutions 2, 76

<sup>35</sup> WTS Resolutions 2, 76

<sup>36</sup> WTS Resolutions 2, 76

by IECEE CMC in June 2019. The June decision will enable all testing laboratories to apply for such recognition following the instructions provided by the OD.<sup>37</sup>

ITU-T CASC, in collaboration with IECEE, is developing a joint ITU/IEC certification scheme. ITU-T CASC established a list of ITU-T Recommendations that may be addressed by joint ITU/IEC certification schemes with input received from ITU members. Among them are Recommendations ITU-T P.1140, ITU-T P.1100, ITU-T P.1110 and ITU-T K.116.<sup>38</sup>

#### T.1-8 Development of test suites

ITU-T study groups developed 141 test specifications in the reporting period, in areas including, but not limited to:

- e-Health (ITU-T H.810 series)
- Cloud interoperability (ITU-T Q.4042.1 series)
- Resistibility of ICT equipment to over-voltages and over-currents (ITU-T K.44, K.20)
- EMC for wire-line telecommunication equipment (ITU-T K.137)
- Conformance testing of PSTN/ISDN terminal using IMS (ITU-T Q.4014.series)
- SDN controller testing (ITU-T Q.4061).

Testing and Test Control Notation version 3 (TTCN-3) was also updated (ITU-T Z.161.series).

The approval of the new Recommendation ITU-T Q.4060 “The structure of the testing of heterogeneous Internet of Things gateways in a laboratory environment” resulted in the opening of a new subcategory of the ITU-T Q.series, ITU-T Q.4060-Q.4099: Testing specifications for IMT-2020 and IoT.

**Objective T.2: Promote the active participation of the membership, in particular developing countries in the definition and adoption of non-discriminatory international standards (ITU-T recommendations) with a view to bridging the standardization gap**

#### Outcomes:

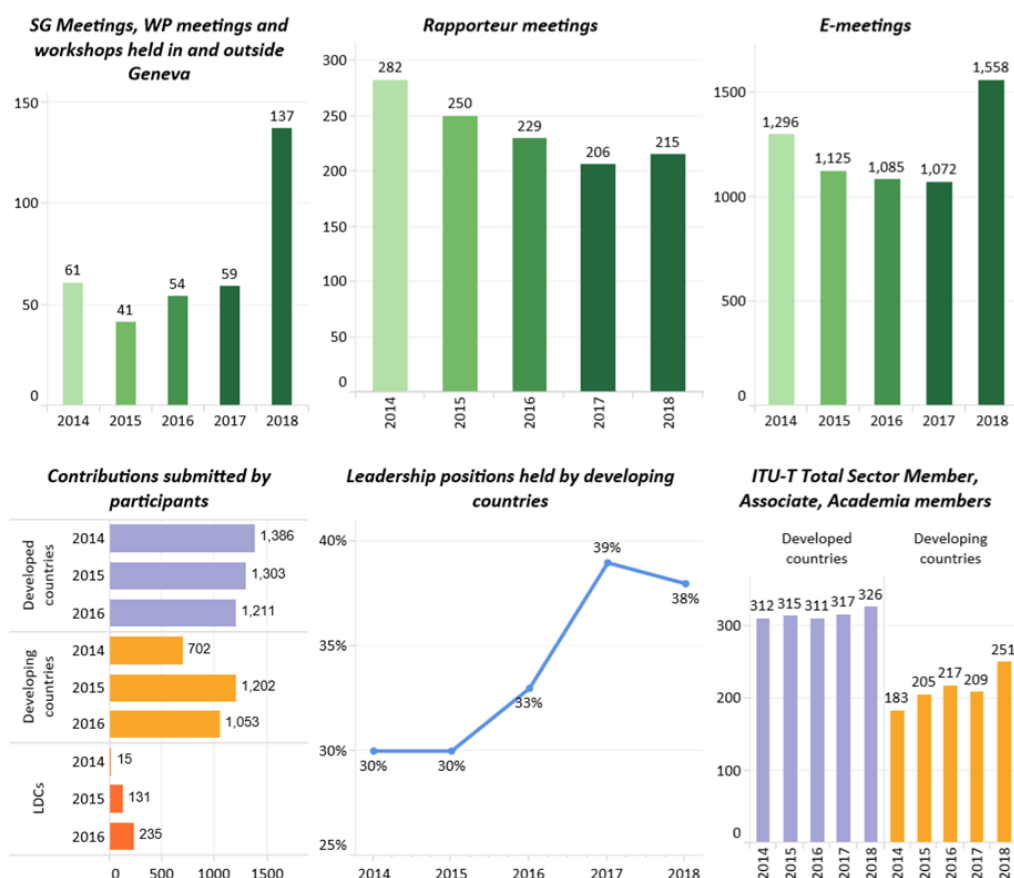
T.2-1: Increased participation in the ITU-T standardization process, including attendance of meetings, submission of contributions, taking leadership positions and hosting of meetings/workshops, especially from developing countries

T.2-2: Increase of the ITU-T membership, including Sector Members, Associates and Academia

<sup>37</sup> WTSR Resolutions 2, 76

<sup>38</sup> WTSR Resolutions 2, 76

## Progress achieved



## Outputs

### T.2-1 Bridging the standardization gap (e.g. remote participation, fellowships, establishment of regional groups)

ITU's Bridging the Standardization Gap (BSG) programme<sup>39</sup> improves the capacity of developing countries to participate in the development and implementation of international ICT standards.

Delegates from developing countries hold 39 per cent of ITU-T chairmanships, 50 per cent of co-chairmanships and 67 per cent of the total number of co-chairmanships and vice-chairmanships.

Regional groups within ITU-T Study Groups have proven effective mechanisms in bridging the standardization gap by stimulating effective participation in ITU-T Study Groups and increasing the number and quality of contributions from the various regions.<sup>40</sup>

Revised ITU-T guidelines on the establishment of National Standardization Secretariats (NSS) will be released soon.

<sup>39</sup> WTS Resolution 44

<sup>40</sup> WTS Resolutions 44, 54; WSIS Action Lines C3, C4, C11; SDG Targets 9.5, 10.6, 17.6

Fellowships continue to be awarded to delegates from certain eligible developing countries.<sup>41</sup> The criteria and eligibility are being reviewed according the provisions of Resolution 213 (Dubai, 2018) “Measures to improve, promote and strengthen ITU fellowships”.

TSB continues to implement innovative e-meeting facilities, see section T.4-2.<sup>42</sup>

## **T.2-2 Workshops and seminars, including offline and online training activities, complementing the capacity-building work on bridging the standardization gap undertaken in ITU-D**

ITU-T organized more than 37 **workshops**. TSB continues to organize “BSG Hands-On Study Group Effectiveness Training” in response to Resolution 44 (WTSA-16). The training focuses on the development of practical skills to maximize the effectiveness of developing countries’ participation in the ITU-T standardization process. Since the introduction of these training sessions in 2016, they have been attended by some 500 delegates representing 82 countries.<sup>43</sup>

## **T.2-3 Outreach and promotion**

Regional Standardization Forums (RSF) are open events at which government, academic and private-sector experts share their knowledge and expectations with respect to emerging trends in standardization.<sup>44</sup> Three RSFs were held during the reporting period, in Asia-Pacific, the Arab States, and Africa. The second Interregional Standardization Forum (ISF) will be held in April 2019.

ITU Kaleidoscope 2018 encouraged submissions from academics in Latin America.<sup>45</sup> The ITU Journal<sup>46</sup> is another means of promoting developing-country engagement with the work of ITU.

## **Objective T.3: Ensure effective allocation and management of international telecommunication numbering, naming, addressing and identification resources in accordance with ITU-T recommendations and procedures**

### **Outcomes:**

**T.3-1:** Timely and accurate allocation of international telecommunication numbering, naming, addressing and identification resources, as specified in the relevant recommendations

<sup>41</sup> WTSA Resolution 44; WSIS Action Line C4; SDG Targets 4.B, 9.5, 10.6, 17.6

<sup>42</sup> WTSA Resolution 32; WSIS Action Line C4; SDG Targets 10.6, 17.6

<sup>43</sup> WTSA Resolutions 18, 44; WSIS Action Line C4; SDG Targets 9.5, 10.6, 17.6

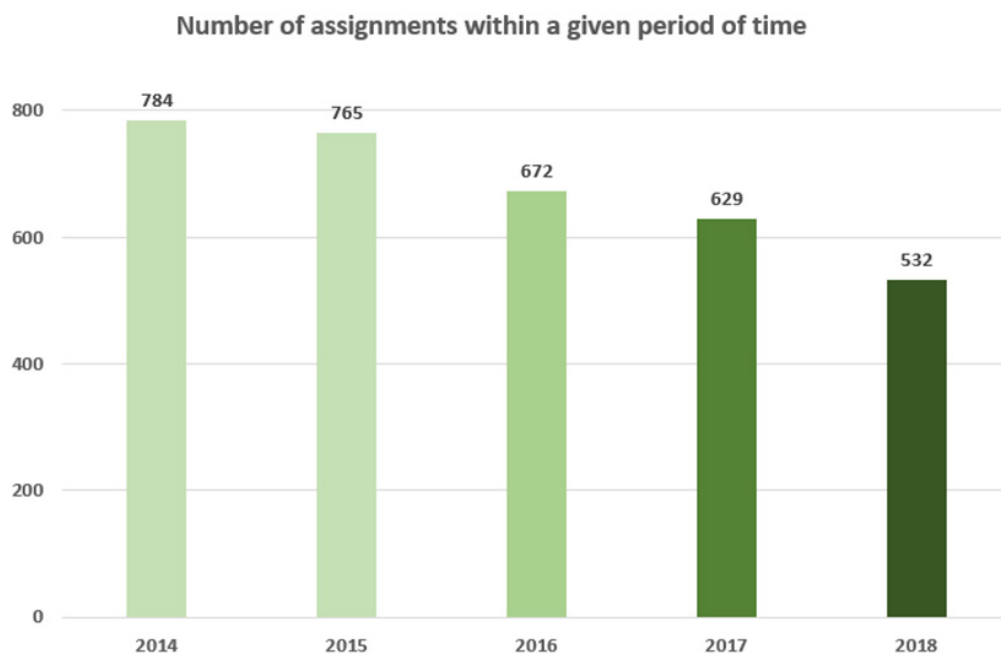
<sup>44</sup> WTSA Resolutions 18, 44; WSIS Action Lines C4, C11; SDG Targets 9.5, 10.6, 17.6

<sup>45</sup> PP Resolution 169; WSIS Action Line C2, C4, C7; SDG Targets 9.5, 17.6

<sup>46</sup> PP Resolutions 169, 207; WSIS Action Line C2, C4, C6, C7; SDG Targets 9.5



## Progress achieved



**Note:** these figures are composed of: Number of assigned UIN, SANC, shared E.164 CC and IC, shared E.212 MCC and MNC

## Outputs

### T.3-1 Relevant TSB databases

The database includes numbers and codes allocated by ITU in accordance with:

- ITU-T E.164 “The international public telecommunication numbering plan”
- ITU-T E.118 “The international telecommunication charge card”
- ITU-T E.212 “The international identification plan for public networks and subscriptions”
- ITU-T E.218 “Management of the allocation of terrestrial trunk radio Mobile Country Codes”
- ITU-T Q.708 “Assignment procedures for international signalling point codes”.

The databases are maintained based on notifications received from National Regulators/Administrations or authorized agencies and the decisions made by the TSB Director as to the numbering resources under his direct responsibility.

### T.3-2 Allocation and management of international telecommunication numbering, naming, addressing and identification resources in accordance with ITU-T recommendations and procedures

Notifications of national numbering/identification plan updates and assignment or reclamation of national numbering/identification resources and updates, assignment or reclamation of international numbering/identification resources are published in the ITU Operational Bulletin, issued twice a month in the six official languages of the Union.<sup>47</sup>

CWG-FHR 9/14, presented in January 2019, provides a status report on the implementation of Council Decisions 600 and 61 (Universal International Freephone Number; Issuer Identifier Number). Following

<sup>47</sup> WTSA Resolution 20; WSIS Action Lines C3, C11; SDG Target 17.6

the approval of Council Decision 600 and 601, in the process of implementing these decisions the accuracy of the UIN and IIN records kept in ITU databases have been improved.

Annex 1 (under Resolution 188 (Rev. Dubai, 2018)) provides a report on the tampering with and duplication of IMEI identifiers<sup>48</sup> used in mobile devices.

## Objective T.4: Foster the acquisition and sharing of knowledge and know-how on the standardization activities of ITU-T

### Outcomes:

T.4-1: Increased knowledge on ITU-T standards and on best practices in their implementation of ITU-T standards.

T.4-2: Increased participation in ITU-T's standardization activities and increased awareness of the relevance of ITU-T standards.

T.4-3: Increased Sector visibility.

### Progress achieved

See the relevant indicators under Objectives T.1 and T.2.

### Outputs

#### T.4-1 ITU-T publications

ITU-T continues to produce Recommendations, Technical Reports and the Operational Bulletin. Over 150 Recommendations (more than 6,000 pages) were published during the reporting period. All documents are published electronically and are freely available on the ITU website in accordance with the paperless policy and free-access policy.

ITU Kaleidoscope 2018 [Conference proceedings](#) were published in December 2018. The ITU Journal: *ICT Discoveries* special issue on [Data for Good](#) was published in March 2019.

#### T.4-2 Database publications

TSB maintains the following ITU-T databases:

- ITU-T Recommendations;
- International Numbering Resources;
- ITU-T Conformity Database;
- ITU-T Patents Database;
- ITU-T Software Copyright Database;
- ITU-T Formal descriptions and Object identifiers databases;
- ITU-T Test Signal Database;
- ITU-T Work Programme;
- ITU-T Terms and Definitions;

<sup>48</sup> WTS Resolution 20; WTS Resolutions 85, 97

In addition, TSB continues to develop new applications and services to maintain and expand ITU-T's advanced electronic working methods:

### ITU-T MyWorkspace

In accordance with [Resolution 32 \(Hammamet, 2016\)](#),<sup>49</sup> TSB has developed a mobile version of [MyWorkspace](#), a personalized webpage restricted to users with an active ITU account. It provides easy access to the information and services most valued by ITU-T delegates, including:

- [ITU-T community](#) and [Chat service](#);
- [Meeting documents](#) with a section to retrieve [bookmarked documents](#);
- [Mailing list subscriptions](#);
- [Calendar of current and future events](#);
- Personalized profile and preferences; and more.

### ICT standards landscape

The [ICT standards landscape](#) platform offers an overview of standardization in a given ICT domain by identifying existing published standards as well as standards that are currently under development by involved Standards Development Organizations (SDOs).<sup>50</sup>

The platform is publicly available online. Specifically, designated ITU-T contributors with supplementary access rights maintain the platform as a Wiki. Contributors are ITU-T members, experts in the domain for which they are responsible and are designated by the respective ITU-T Study Groups. Access rights are updated by TSB on demand.

The latest release, which contains improvements based on recent feedback.

### ITUSearch 2.0

In accordance with [Resolution 32 \(Hammamet, 2016\)](#), TSB has developed a new [search engine](#) facilitating navigation of the full collection of ITU documents, publications and web pages.

A new design was developed during the reporting period, considering recent feedback to improve user experience. The engine is currently under final testing and the new design is expected to be released in April 2019.

### Automatic translation powered by machine learning

In accordance with [Resolution 154 \(Rev. Dubai, 2018\)](#),<sup>51</sup> within the framework of new translation initiatives, TSB is developing an automatic machine translation engine based on neural networks, which is being trained exclusively on ITU corpus.

A prototype enabling online document translation from English to the five other official languages of the Union, and vice versa, is already available. This prototype was tested for the first time at a meeting of the ITU-T Study Group 2 Regional Group for the Arab Region held in Cairo, Egypt, from 4 to 6 December 2018.

This new application was added to MyWorkspace in early 2019, as "[Automatic Translation Service](#)".

<sup>49</sup> PP Resolution 167; WTS Resolution 32

<sup>50</sup> WTS Resolutions 50, 52; WSIS Action Lines C5, C11; SDG Target 17.6

<sup>51</sup> WTS Resolution 67

## ITU-T e-meetings

In accordance with [Resolution 32 \(Hammamet, 2016\)](#), TSB has developed a user-friendly e-meeting solution, incorporating high-quality audio and video compatible with Recommendation ITU-T H.264 to increase the accessibility and flexibility of remote participation in ITU-T meetings.

This solution is available in MyWorkspace as “[Remote participation](#)”.

A service announcements platform, <http://tsbtech.itu.int>, keeps the ITU-T community up to date with the latest enhancements to TSB services and tools.

### T.4-3 Outreach and promotion

TSB maintains a consistent output of original ITU-T news content, coupled with a coordinated social media strategy led by the ITU General Secretariat. Infographics, animations and video form part of TSB communications packages, which incorporate ITU-T expert interviews, event wrap-up videos, and videos expressly designed for social media. TSB communications are systematically distributed using a variety of social media channels including Twitter, Facebook, LinkedIn, Weibo and YouTube.

Communications on ITU-T standardization feature among the most popular ITU content each year. ITU-T news is published on the [ITU News platform](#), a mobile-optimized platform which incorporates multimedia and improves search-engine results and sharing. A new “[Standards](#)” category of ITU News focuses on the work of ITU-R and ITU-T.

### T.4-4 ITU Operational Bulletin

See section T.3-2.<sup>52</sup>

## Objective T.5: Extend and facilitate cooperation with international, regional and national standardization bodies

### Outcomes:

T.5-1: Increased communications with other standards organizations

T.5-2: Decreased number of conflicting standards

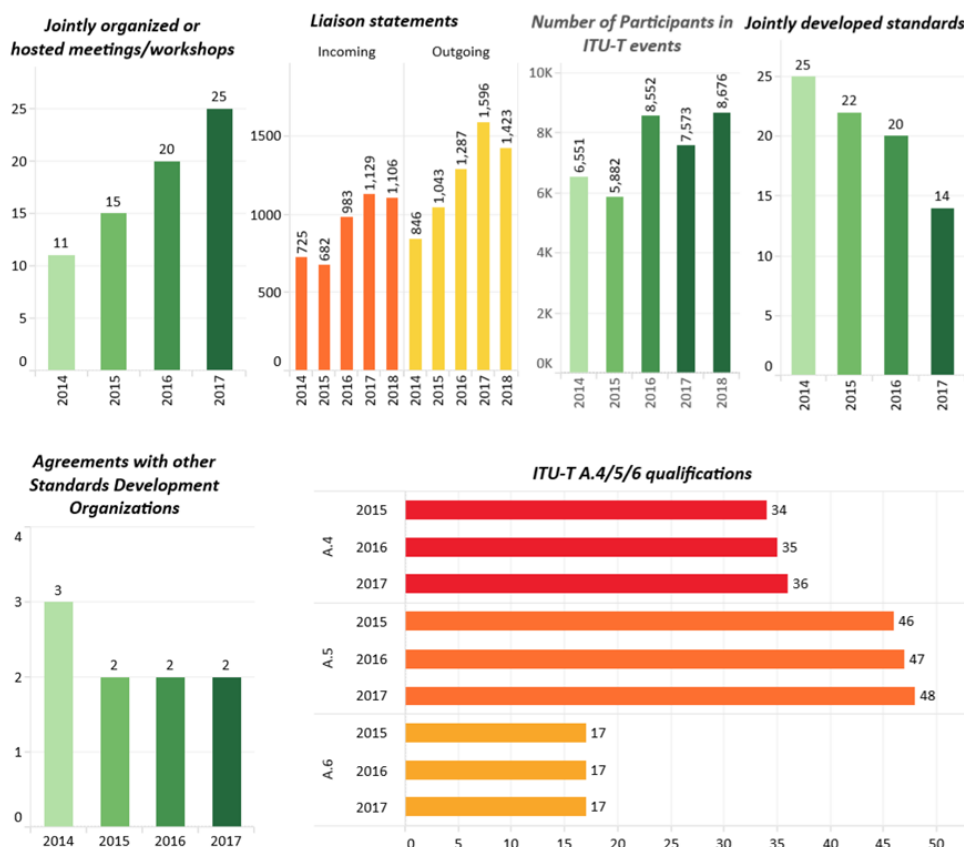
T.5-3: Increased number of memoranda of understanding / collaboration agreements with other organizations

T.5-4: Increased number of ITU-T A.4, A.5 and A.6 qualified organizations

T.5-5: Increased number of workshops/events organized jointly with other organizations

<sup>52</sup> WTSA Resolution 1

## Progress achieved



## Outputs

### T.5-1 Memoranda of Understanding (MoUs) and collaboration agreements

A new MoU between ITU and Tsinghua University and a corresponding Co-publishing Agreement between ITU and Tsinghua University Press were signed in January 2019. These agreements support the establishment of a new joint publication under the framework of the ITU Journal.<sup>53</sup>

More in-force MoUs and collaboration agreements can be found on an [ITU webpage](#).

### T.5-2 ITU-T A.4/A.5/A.6 qualifications

ITU-T's external cooperation is guided by three ITU-T Recommendations:

- ITU-T A.4- Procedures for communicating with forums and consortia.
- ITU-T A.5- Making reference to documents from other organizations.
- ITU-T A.6- Cooperation and exchange of information with national and regional SDOs.

The list of A.4/A.5/A.6-qualified organizations, including organizations under evaluation, can be found at: <http://www.itu.int/en/ITU-T/extcoop/Pages/sdo.aspx>.<sup>54</sup>

<sup>53</sup> PP Resolution 207; WSIS Action Line C11; SDG 17.6, 17.16

<sup>54</sup> WSIS Action Line C11; SDG Targets 17.6, 17.16

### T.5-3 Jointly organized workshops/events

ITU-T co-organized ten workshops during the reporting period:<sup>55</sup>

- ITU/UN-Habitat/UNDP Forum “Smart sustainable cities: technological trends, success stories and future prospects”, Minsk, Belarus, 26-27 February 2019
- Joint ITU-NGMN Conference “Licensing practices in 5G industry segments”, Geneva, Switzerland, 29-30 January 2019
- Financial Inclusion Global Initiative (FIGI) Symposium, Cairo, Egypt, 22-24 January 2019
- ITU Workshop on “Artificial Intelligence, Machine Learning and Security” , Geneva, Switzerland, 21 January 2019
- Third ITU/WHO Workshop on “Artificial Intelligence for Health”, Lausanne, Switzerland, 22 January 2019
- World Smart City Forum, Santa Fe, Argentina, 29 November 2018
- ITU Workshop on “Artificial Intelligence for Health”, New York City, United States, 14 November 2018
- ITU Forum “Towards 5G Enabled Gigabit Society”, Athens, Greece, 11-12 October 2018
- ITU/SAE Workshop on “How communications will change vehicles and transport”, Detroit, MI, United States, 8-9 October 2018
- ITU Workshop on “Artificial Intelligence for Health”, Geneva, Switzerland, 25 September 2018
- International Forum on Intelligent Transport Systems (ITS), Nanjing, China, 6-7 September 2018

TSB supports the achievement of Objective T.5 of the Strategic Plan of the Union, “Extend and facilitate cooperation with international, regional and national standardization bodies”, by facilitating an ITU-T presence in activities arranged by other standards bodies, with a view to promoting other standards bodies’ engagement with ITU-T workings groups, workshops and related ITU-T collaboration initiatives. TSB’s efforts in this regard have generated positive results, resulting in greater requests for additional information on ITU-T activities from national, regional, and international standards bodies.

<sup>55</sup> WSIS Action Line C11; SDG Target 17.6, 17.16

## 5 ITU-D objectives and results achieved (Telecommunication Development Sector)

### Objective D.1: Foster international cooperation on telecommunication/ICT development issues

#### Outcomes:

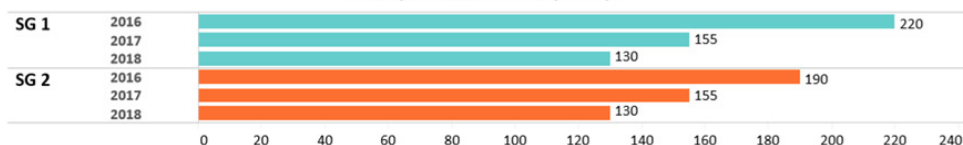
- D.1-1: Draft strategic plan for ITU-D
- D.1-2: WTDC Declaration
- D.1-3: WTDC Action Plan
- D.1-4: Resolutions and recommendations
- D.1-5: New and revised Questions for study groups
- D.1-6: Increased level of agreement on priority areas
- D.1-7: Assessment of the implementation of the Action Plan and of the WSIS Plan of Action
- D.1-8: Identification of regional initiatives
- D.1-9: Increased number of contributions and proposals for the Action Plan
- D.1-10: Enhanced review of priorities, programmes, operations, financial matters and strategies
- D.1-11: Work programme
- D.1-12: Comprehensive preparation of progress report to the Director of BDT on the implementation of the work programme
- D.1-13: Enhanced knowledge-sharing and dialogue among Member States and Sector Members (including Associates and Academia) on emerging telecommunication/ICT issues for sustainable growth.
- D.1-14: Strengthened capacity of members to develop and implement ICT strategies and policies as well as to identify methods and approaches for the development and deployment of infrastructure and applications

## Progress achieved

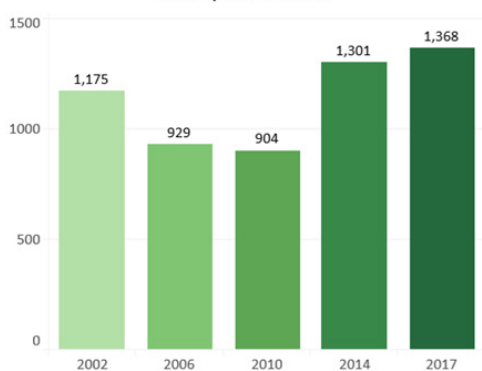
### Regional Preparatory Meetings 2016 & 2017

	Participants	Member States or Sector Members from the region represented	Member States or Sector Members from other regions
AFR	168	30	11
AMS	166	26	6
ARB	195	29	1
ASP	225	40	11
CIS	104	9	2
EUR	70	23	10
No RPMs in 2018			

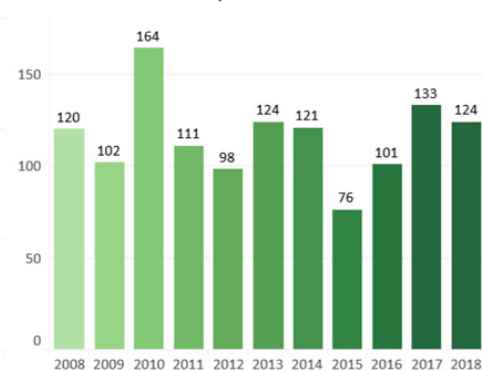
### Participants to ITU-D Study Groups



### Participants in WTDC



### Participants in TDAG



## Outputs

### D.1-1 World Telecommunication Development Conference (WTDC)<sup>56</sup>

The next World Telecommunication Development Conference (WTDC) will be held in 2021. The final report of the 2017 World Telecommunication Development Conference (WTDC-17), convened in Buenos Aires, Argentina, from 9 to 20 October 2017 is [available](#). A BDT Management Retreat was held from 31 March to 2 April 2019 in Geneva. The retreat was held under the theme of moving towards a “Fit for Purpose” ITU BDT. The main focus of the retreat was to discuss and align on the key challenges and opportunities in becoming a “Fit for Purpose” ITU BDT, and develop a clear and actionable plan on how to achieve it. Special guest speakers and experts from other UN agencies, Member States, and Academia also joined to share best practices and stimulate thinking.

### D.1-2 Regional preparatory meetings (RPMs)<sup>57</sup>

The next Regional Preparatory Meetings (RPMs) will be held in 2020 and 2021.

<sup>56</sup> WTDC Res. 1, 2, 5, 30, 33, 37, 50, 53, 59, 81, 82; PP Dec. 5, 13; PP Res. 25, 71, 72, 77, 111, 131, 133, 135, 139, 140, 151, 154, 165, 167; Council R 1372; WSIS Action Lines C1, C11; SDG 1, 3, 5, 10, 16, 17.

<sup>57</sup> WTDC Res. 5, 17, 25, 30, 31, 33, 37, 48, 50, 59, 61, 81; PP Dec. 5, 13; PP Res. 25, 71, 111, 135, 140, 165, 167; WSIS Action Lines C1, C11; SDGs 1, 3, 5, 10, 16, 17.



With the aim of facilitating the implementation of Regional Initiatives, a series of Regional Development Forums took place in 2018:

- ITU Regional Development Forum for the Asia-Pacific Region in Bangkok, Thailand, 21-22 May 2018.
- ITU Regional Development Forum for the Americas Region in Lima, Peru, 25 May 2018.
- ITU Regional Development Forum for Europe in Prague, Czech Republic, 11 June 2018.
- ITU Regional Development Forum for Africa in Accra, Ghana, 19-20 July 2018. ITU Regional Development Forum for the Arab States in Beirut, Lebanon, 19 March 2019.

#### D.1-3 Telecommunication Development Advisory Group (TDAG)<sup>58</sup>

The 24rd meeting of the Telecommunication Development Advisory Group (TDAG) took place from 3 to 5 April 2019 in Geneva. This meeting had a broad agenda as it marked the first TDAG meeting after PP-18. The meeting discussed the following topics:

##### Outcomes of PP-18 related to the work of ITU-D;

- ITU-D four-year rolling Operational Plan 2020-2023 and implementation of the ITU Strategic Plan and ITU-D Operational Plan 2018, including regional trends and activities;
- ITU-D contribution to the implementation of the WSIS Plan of Action and the 2030 Agenda for Sustainable Development;
- ITU-D Study Group-related matters;
- Collaboration with the other Sectors;
- Preparations for WTDC-21, including Regional Development Forums and Regional Preparatory Meetings;
- ITU-D major events and initiatives, including infrastructure and spectrum management activities, cybersecurity and ICT applications, regulatory and market environment, including Global Symposium for Regulators (GSR), Digital inclusion, capacity-building activities, ICT data and statistics, including World Telecommunication/ICT Indicators Symposium (WTIS), emergency telecommunications, climate change, e-waste, LDCs, LLDCs, and SIDS, ITU-D projects and innovation;
- Membership, partnership and private sector-related matters
- Calendar of ITU-D events.

During TDAG, breakout sessions on four process/governance topics and four programme topics, and informal sessions on six regional initiatives were [organized to foster fruitful discussions and exchanges of views](#).

<sup>58</sup> WTDC Res. 1, 5, 17, 24, 30, 33, 50, 59, 61, 81; PP Dec. 5, 13; PP Res. 25, 71, 111, 135, 140, 151, 154, 165, 166, 167; Council R 1372; WSIS Action Lines C1, C11; SDGs 1, 3, 5, 10, 16, 17.

#### D.1-4 Study groups<sup>59</sup>

The ITU-D study groups held their first Study Group 1 and 2 meetings for the 2018-2021 study period from 30 April to 4 May and from 7 to 11 May 2018, respectively, after WTDC-17. The meetings appointed 139 rapporteurs and vice-rapporteurs. They agreed on work plans for all study questions, most of which had prepared overviews and tables of content for their deliverables.

The 2018 ITU-D SG1 and SG2 Rapporteur Group meetings were held from 17 September to 11 October 2018. Ten focus sessions/workshops and capacity-building sessions were held.

Synergies were explored between study group topics and workshops/seminars and seminars held in the regions. Some examples can be seen from pilots conducted in Hungary (with a regional seminar on 5G Implementation in Europe and CIS), Mexico (with the ITU Regional Economic Dialogue on Telecommunications/ICTs for Latin America and the Caribbean) and Burkina Faso (with the 2018 Regional Economic Dialogue for Africa).

Furthermore, the two ITU-D study groups agreed to proceed with the implementation of the Council 2017-initiated pilot project for participation of SMEs in ITU study groups. In 2018, seven SMEs participated in the pilot project with their Administration's support.

The second Study Group 1 and Study Group 2 meetings were held from 18 to 22 March and from 25 to 29 March 2019, respectively. They appointed 16 additional vice-rapporteurs and two co-rapporteurs to support the Questions under study. The meetings received increased number of contributions to progress their study and requested ITU-D members and partners for additional quality contributions for good practices taking into account the fast evolving telecommunication/ICT trends and environment. Annual deliverables related to "Trends in new broadcasting technologies, services and applications" and "A holistic approach to creating smart societies" were released for the first time.

<sup>59</sup> WTDC Res. 1, 2, 5, 9, 17, 21, 30, 33, 50, 59, 61, 80, 81; ITU-D Recommendations 15, 16, 17, 19, 20, 21, 22; PP Dec. 5, 13; PP Res. 25, 71, 133, 135, 140, 154, 165, 166, 167; Council R1372; WSIS Action Lines C11, C11; SDGs 1, 3, 5, 10, 16, 17.

## Objective D.2: Foster an enabling environment for ICT development and foster the development of telecommunication/ICT networks as well as relevant applications and services, including bridging the standardization gap

### Outcomes:

**D.2-1:** Enhanced dialogue and cooperation among national regulators, policy-makers and other telecommunication/ICT stakeholders on topical policy, legal and regulatory issues to help countries achieve their goals of creating a more inclusive information society

**D.2-2:** Improved decision-making on policy and regulatory issues and conducive policy, legal and regulatory environment for the ICT sector

**D.2-3:** Enhanced awareness and capability of countries to enable planning, deployment, operation and maintenance of sustainable, accessible and resilient ICT networks and services, including broadband infrastructure, and improved knowledge of available broadband transmission infrastructure worldwide

**D.2-4:** Enhanced awareness and capability of countries to participate in and contribute to the development and deployment of ITU Recommendations and put in place sustainable and appropriate conformance and interoperability programmes, on the basis of ITU Recommendations, at national, regional and sub regional levels by promoting the establishment of mutual recognition agreement (MRA) regimes and/or building testing labs, as appropriate

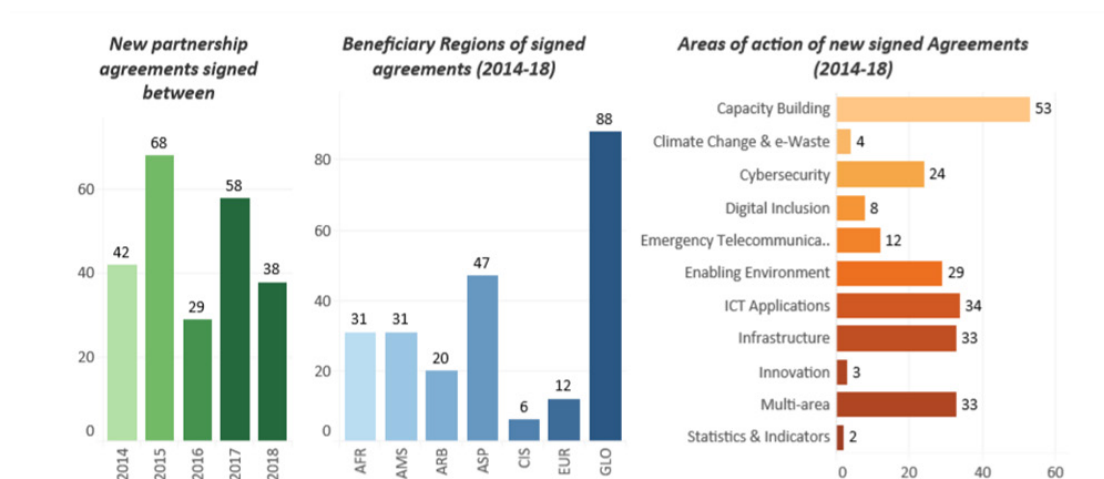
**D.2-5:** Enhanced awareness and capability of countries in the fields of frequency planning and assignment, spectrum management and radio monitoring, in efficient utilization of tools for managing the spectrum and in measurement and regulation related to human exposure to electromagnetic fields (EMF).

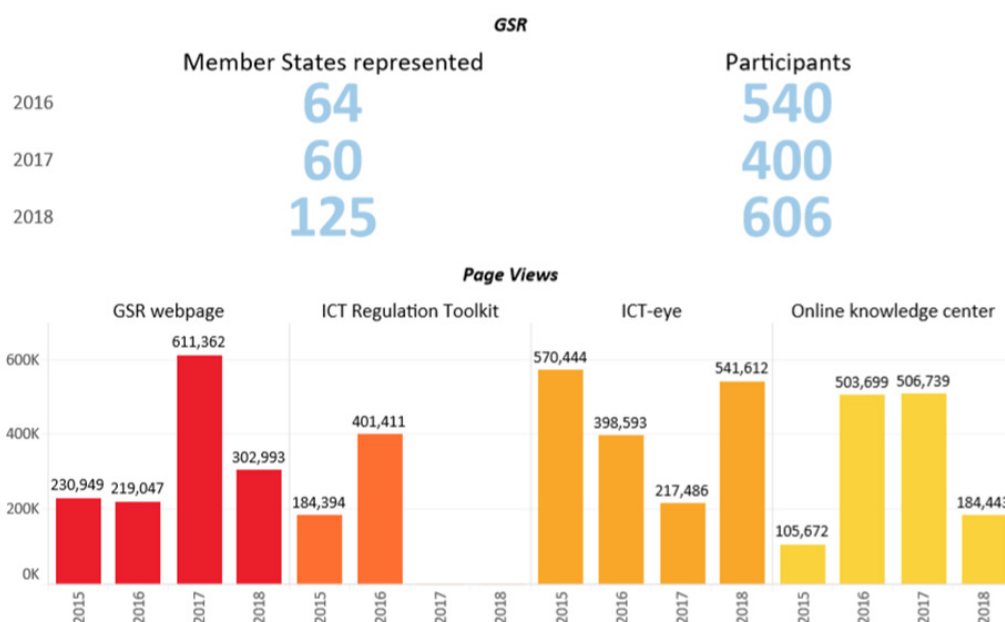
**D.2-6:** Enhanced awareness and capability of countries in the transition from analogue to digital broadcasting and in post-transition activities, and effectiveness of implementation of the guidelines prepared

**D.2-7:** Strengthened members' capacity to integrate telecommunication/ICT innovation in national development agendas

**D.2-8:** Enhanced public-private partnership to foster the development of telecommunications/ICTs

### Progress achieved





## Outputs

### D.2-1 Policy and regulatory frameworks<sup>60</sup>

ITU-D convened global and regional forums to discuss global trends in regulation for Sector Members and other national and international stakeholders, through organizing the Global Symposium for Regulators (GSR) as well as strategic dialogues on policy, legal, regulatory, economic, and financial issues and market developments. The 18th edition of the Global Symposium for Regulators (GSR) was held from 9 to 12 July in Geneva under the theme of “New Regulatory Frontiers”. The event culminated with the adoption, by ICT regulators, of a set of Best Practice Guidelines on new regulatory frontiers to achieve digital transformation.

ITU-D continued to provide high-quality data, research, analyses, and tools (GSR discussion papers, publications, databases) to support membership in implementing and reviewing strategies, policies and legal and regulatory frameworks as well as in moving towards evidence-based decision-making. Publications included an ITU Report on Setting the stage for 5G: Opportunities and challenges, a report on the economic contribution of broadband, digitization and ICT regulation, and a report on regulatory challenges and opportunities in the new ICT ecosystem, among others. The 2018 Global ICT Regulatory Outlook Report was launched in late 2018 as a second report in the annual series tracking market and regulatory trends in the ICT sector and their implications. The 2017 regulatory and policy data were published on the ICT Regulatory Tracker and are available on the ITU website.

ITU-D also provided knowledge exchange tools and platforms (portals on International Mobile Roaming (IMR) resources, Quality of Service, the Digital Ecosystem, Infrastructure Development and a Regional Regulatory Associations Portal) to enable inclusive dialogue and enhanced cooperation, and to raise national and regional awareness about the importance of an enabling environment.

ITU-D continued to assist countries by raising awareness, building and strengthening capacities and providing technical support through projects, trainings, workshops, seminars, forums and conferences. Topics covered included regulatory frameworks, ICT development, broadband infrastructure,

<sup>60</sup> WTDC Res. 1, 9, 17, 21, 23, 30, 32, 43, 48, 62; PP Dec. 5, 13; PP Res. 25, 71, 102, 135, 138, 154, 165; WCIT Res. 3; WSIS Action Lines C6, §§ 112-119 of the Tunis Agenda; SDGs 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 13, 16, 17.

applications and services, International Mobile Roaming (IMR), 5G, e-agriculture, e-health, emerging technologies, infrastructure development, spectrum management, satellite coordination, Internet access, licensing, pricing, policy and regulatory collaboration in and strengthening digital financial services and digital financial inclusion, digital economy, and others.

## D.2-2 Telecommunication/ICT networks, including conformance and interoperability and bridging the standardization gap<sup>61</sup>

ITU-D implements and updates the ITU Interactive Terrestrial Transmission Maps (<http://itu.int/go/Maps>). The ITU Maps present critical ICT infrastructure on broadband backbone optical fibre, micro-wave links, satellite earth stations and submarine cables. The Maps interface was renewed to allow new data visualizations and data analytics. The Maps allow for graphical improvement proposals, wireframes for smartphone and tablet applications and dashboard and statistics. Video and demonstrations for events were developed and are ready to be deployed. At the time of this reporting, the Maps presented information from 443 operator networks and 22,413 nodes worldwide. The research on the transmission links has reached 13 726,736 km of routes, of which 3,546,379 km has been imported to the Maps. A new webpage, additional layers (IXPs in collaboration with Telegeography) and dashboards have been added; submarine cables and information on IXPs and on satellite earth stations were updated.

Further developments to the Spectrum Management System for Developing Countries (SMS4DC) software are underway covering administrative and radio communication functions. Technical assistance and training programmes were provided in this area to several countries and regions.

Assistance continues in the areas of broadband connectivity and developing ICT applications to provide free or low-cost digital access for schools, hospitals and underserved populations in rural and remote areas in selected countries. For instance, the broadband wireless network is fully operational in Burundi with 437 institutions and users connected to the network. The broadband wireless network in Burkina Faso is fully installed and operational. In Djibouti, all five provinces are connected, and the broadband network is fully operational. Broadband wireless networks have also been installed in Rwanda, Antigua and Barbuda and St. Kitts and Nevis.

In accordance with WTDC Resolution 47 (Rev. Dubai, 2014), regional forum assessment studies and training courses on C&I were organized with the participation of several countries and regions.

Capacity of ITU members was built and training programmes were organized in such areas as telecommunication/ICT network issues, including conformance and interoperability, digital terrestrial television, IPv6, SMS4DC, spectrum management and allocation and frequency planning and coordination.

Direct assistance was provided regarding several topics, to include frequency planning, spectrum management structures and activities, the transition from analogue to digital terrestrial television broadcasting, future Internet exchange and IPv6-based broadband, implementation of broadband wireless networks, radio broadcasting and national and regional Internet Exchange Points (IXP).

## D.2-3 Innovation and partnership<sup>62</sup>

**Partnership in the ICT ecosystem:** Partnership and resource mobilization was enhanced through direct contacts, networking, conference calls, missions, and meetings. In 2018, 38 new partnership

<sup>61</sup> WTDC Res. 1, 9, 10, 11, 13, 17, 18, 20, 21, 22, 23, 25, 30, 32, 35, 37, 39, 43, 47, 48, 50, 51, 52, 57, 62, 63, 77; Recommendations 17, 19, 22; PP Dec. 5, 13; PP Res. 25, 71, 101, 123, 176, 177, 178, 203; WRC Res. 12, 55, 212, 223, 224, 238, 908, Rec. 207; WTSA Res. 17, 20, 29, 44, 64, 72; WCIT Res. 5; WSIS Action Lines C2, C3, C7, C9, and section “Financial mechanism for meeting the challenges of ICT for development” of the Tunis Agenda; SDGs 1, 6, 8, 9, 11, 17.

<sup>62</sup> WTDC Res 1, 5, 30, 33, 50, 59, 71, 157 ; PP Dec. 5, 13 ; PP Res. 25, 71, 72 ; WSIS Action Lines 3, 4, 5, 6, 7, and “Financial mechanism for meeting the challenges of ICT for development” of the Tunis Agenda; SDGs 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 16, 17.

agreements were signed with various stakeholders: 13 on enabling environment, six on infrastructure, four each on capacity building, cybersecurity and on multi-thematic areas; two each on emergency telecommunications, on ICT-applications and on e-waste, one on digital inclusion. The beneficiary regions of these newly-signed agreements were: Global (19), the Americas and Asia-Pacific (five each), Africa (four), Arab States (three) and Europe and CIS (one each).

**Sponsorship Opportunities:** Since January 2018, four sponsorship opportunities opened for ITU-D Study Group meetings, ICT(4)SDGs: ITU-Academia Partnership Platform, GSR-18 and ITU-D Study Group Rapporteur Group meetings. These are posted on the BDT interactive sponsorship opportunities platform/webpage launched in 2017. Out of the 38 new partnership agreements signed, ten are sponsorship agreements.

**ITU-D membership:** Eight new sector members, four new associates and 37 new affiliated academic institutions have joined the work of ITU-D in 2018; and 12 denunciations in total from sector members and associates.

**Innovation:** To accelerate the achievement of the Buenos Aires Action Plan, the innovation programme further strengthened the innovation platform through the development of new products and services, such as the Digital Innovation Profiles, the Ecosystem Reviews, the Innovation Challenge and the Global Good Practice Reports. Through technical assistance, digital innovation profiles were developed and published for Bosnia and Herzegovina, Serbia, and South Africa. Digital Innovation Profiles development is ongoing for North Macedonia, Zimbabwe, and Montenegro. One Global Good Practice Report for Europe was launched during WSIS 2018, including a re-launch of a previous toolkit in the six official languages of the UN.

ITU continued organizing innovation dialogues by hosting the annual WSIS innovation. In 2018, five sessions including a high-level panel with the theme “Accelerating Digital transformation, building ICT-centric innovation ecosystems”, explored three key areas: evidence-based innovation practices, innovation ecosystems implementation tools, and funding policy for high impact sustainable flagship projects. Additionally, BDT co-organized several events with UNIDO and GMIS at ITU Telecom 2018 and on the sidelines of the ITU-D study groups on Digital innovation ecosystem and industry 4.0 and smart society.

Through the innovation capacity-building workshop and knowledge sharing, over 90 people from over 54 countries received training on how to build digital innovation ecosystems, including at such events as the Young ICT leaders Forum (innovation challenge) held in Busan, Korea (Rep. of), the Regional Innovation Forum held in Oslo, Norway, and national workshops in Thailand and South Africa. Some of these capacity-building workshops led to new projects being co-created with ITU membership, such as the digital transformation centre initiative launched in Durban, South Africa, or work-in-progress innovation project by Oslo Metropolitan University in Oslo, Norway.

## Objective D.3: Enhance confidence and security in the use of telecommunications/ICTs, and roll-out of relevant applications and services

### Outcomes:

**D.3-1:** Strengthened capacity of Member States to incorporate and implement cybersecurity policies and strategies into nationwide ICT plans, as well as appropriate legislation

**D.3-2:** Enhanced ability of Member States to respond to cyberthreats in a timely manner

**D.3-3:** Enhanced cooperation, information exchange and know-how transfer among Member States and with relevant players

**D.3-4:** Improved capacity of countries for the planning of national sectoral e-strategies to foster the enabling environment for upscaling ICT applications

**D.3-5:** Improved capacity of countries to leverage ICT/mobile applications to improve the delivery of value-added services in high-priority areas (e.g. health, governance, education, payments, etc.) in order to provide effective solutions for various challenges in sustainable development through public-private collaboration

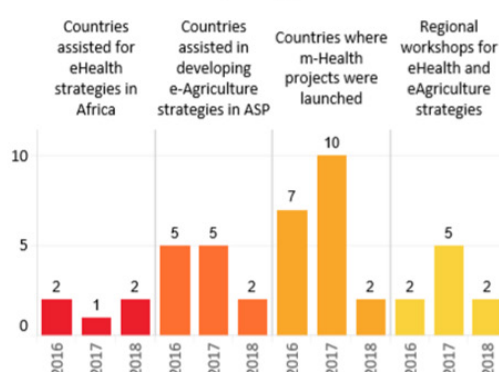
**D.3-6:** Enhanced innovation, knowledge and skills of national institutions to use ICT and broadband for development

### Progress achieved

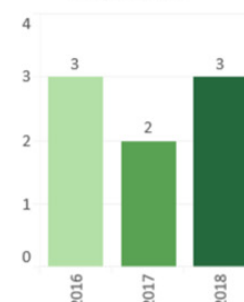
#### Regional event on e-Agriculture organized with FAO Participants from Asia Pacific region



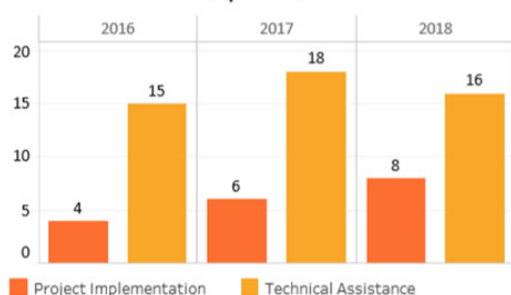
#### Indicators for e-Applications



#### ICT for Development handbooks/toolkits published for mHealth and e-Agriculture



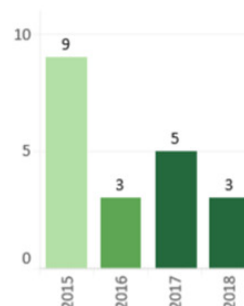
#### Countries Assisted in Establishing Cybersecurity-related Capabilities



#### Regional drills organized in Africa, America and Arab regions



#### Countries with established CIRTs



#### e-Health High-level events conducted with WHO and UNESCO (2016)



## Outputs

### D.3-1 Building confidence and security in the use of ICTs<sup>63</sup>

BDT continued to provide support to ITU membership, in particular to developing countries, in building trust and confidence in the use of ICTs. BDT's activities covered, *inter alia*, capacity-building and outreach initiatives, activities related to legal and technical improvements and international cooperation, to include:

- Initiating the third iteration of the Global Cybersecurity Index (GCI) aimed at measuring the commitment of Member States to cybersecurity. The launch is expected during the first quarter of 2019.
- Launching a National Cybersecurity Strategy Guide at TELECOM World as a multistakeholder effort facilitated by ITU, in partnership with the University of Oxford, Deloitte, Microsoft, Potomac Institute, RAND Europe, UNCTAD, World Bank, etc.
- Implementing several initiatives and activities in the area of cybersecurity culture and addressing its relevant issues (e.g., in Tunisia, Iran, Cameroon, Ukraine, etc.).
- Assisting in establishing and strengthening national CIRTs in countries such as Cyprus, Kyrgyzstan, Malawi, Botswana, Gambia, Burundi, Samoa, and Tonga.
- Conducting five regional Cyberdrills in, Azerbaijan, Kuwait, Cyprus, Argentina, and Côte d'Ivoire.

### D.3-2 ICT applications and services<sup>64</sup>

Member States, to develop national e-strategies that foster an enabling environment for upscaling ICT applications, continued numerous activities, including *inter alia*:

For e-Health:

- The mHealth for NCD joint ITU-WHO "Be Healthy, Be Mobile" initiative continues to provide support to eleven countries to run mHealth projects for tobacco cessation, diabetes, cervical cancer and respiratory diseases.
- MHealth for NCD implementation handbooks were published for mDiabetes, mCancer, mTobacco, mAgeing, mBreathefreely.
- In the context of the joint "ITU-WHO mHealth Innovation and Knowledge Hub in EU" project, a call for Expressions of Interest and Request for Proposals was launched to host the Hub. Contracting with the Hub host is undergoing.
- As part of m and e-health initiative in the Americas, ITU and PAHO agreed to apply the National eHealth Strategy toolkit to Guyana. The complete draft strategy was finalized and submitted as an ITU contribution into the longer process PAHO and Guyana will continue until July 2019.

For e-Agriculture:

- A #HackAgainstHunger was organized in collaboration with the Food and Agriculture Organization (FAO) to identify and support innovative solutions aimed at addressing challenges in the area of food and agriculture.
- Assistance was provided to Afghanistan in the development of their e-agriculture strategy in partnership with FAO and the national government.

<sup>63</sup> WTDC Res. 1, 5, 9, 15, 30, 33, 37, 45, 50, 59, 64, 67, 69, 78, 79 ; PP Dec. 5, 13 ; PP Res. 25, 71, 72, 130, 179, 181 ; WTS Res. 50, 52, 58 ; WSIS Action Lines C5 ; SDGs 1, 3, 4, 5, 7, 8, 9, 10, 11, 16, 17.

<sup>64</sup> WTDC Res. 1, 5, 30, 54 ; PP Dec. 5, 13 ; PP Res. 25, 71, 72, 139, 140, 183, 202 ; WSIS Action Line C7 ; SDGs 2, 3, 4, 6, 7, 8, 11.



For e-Learning:

- ITU co-organized the Mobile Learning Week 2018 with UNESCO that focused on the challenges and strategies to offer digital skills development opportunities for all.

A project on Digital Identity for Development was launched to assist countries, particularly low- and middle-income countries (LMICs), to deploy digital identity initiatives that can enable value-added services in most digital economy areas, including financial services, health, agriculture, and education, among others.

Activities were successfully organized in Ukraine (e-Health), Lebanon (e-Health) and Niger (e-applications).

#### Objective D.4: Build human and institutional capacity, provide data and statistics, promote digital inclusion and provide concentrated assistance to countries in special need

##### Outcomes:

D.4-1: Enhanced capacity building of membership in international Internet governance

D.4-2: Improved knowledge and skills of ITU membership in the use of telecommunications/ICTs

D.4-3: Enhanced awareness of the role of human and institutional capacity building for telecommunications/ICTs and development for the ITU membership

D.4-4: Enhanced information and knowledge of policy-makers and other stakeholders on current telecommunication/ICT trends and developments based on high-quality, internationally comparable telecommunication/ICT statistics and data analysis

D.4-5: Enhanced dialogue between telecommunication/ICT data producers and users and increased capacity and skills of producers of telecommunication/ICT statistics to carry out data collections at the national level based on international standards and methodologies

D.4-6: Strengthened capacity of Member States to develop and implement digital inclusion policies, strategies and guidelines to ensure telecommunication/ICT accessibility for people with specific needs and the use of telecommunications/ICTs for the social and economic empowerment of people with specific needs

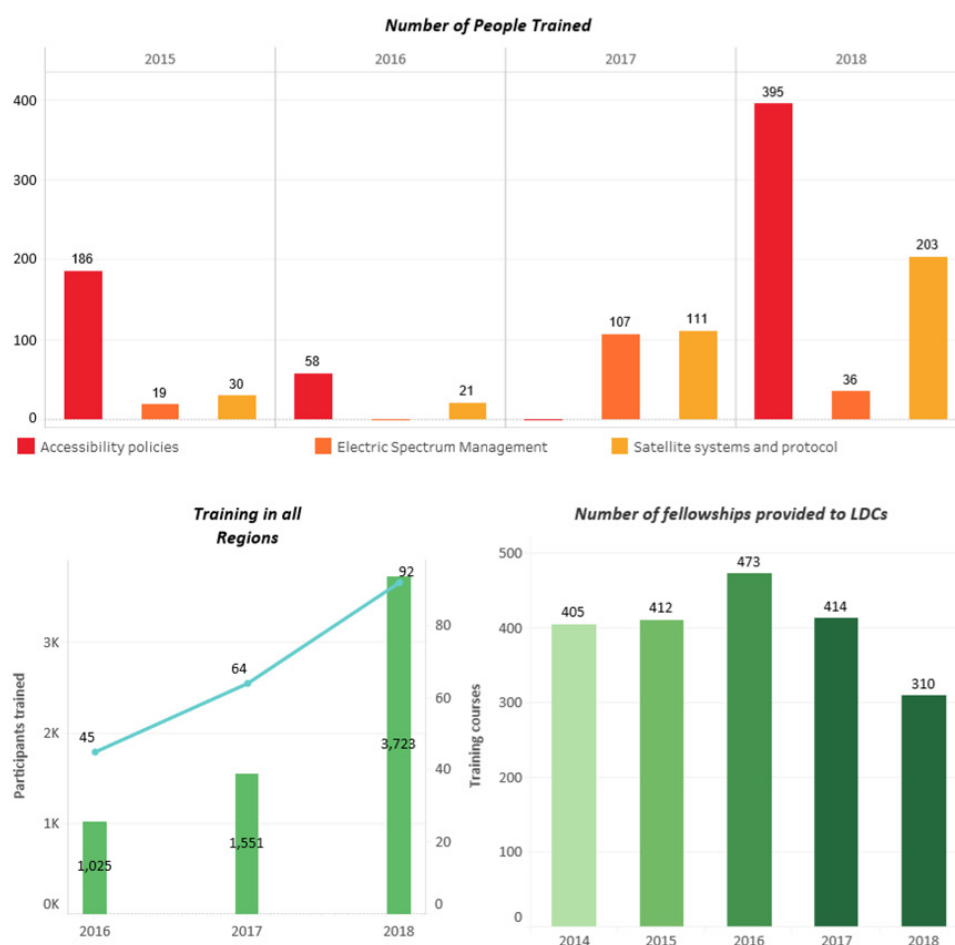
D.4-7: Improved capacity of members to provide people with specific needs with digital literacy training and training on the use of telecommunications/ICTs for social and economic development

D.4-8: Improved capacity of members in using telecommunications/ICTs for the social and economic development of people with specific needs, including telecommunication/ICT programmes to promote youth employment and entrepreneurship

D.4-9: Improved access to and use of telecommunications/ICTs in LDCs, SIDS, LLDCs and countries with economies in transition

D.4-10: Enhanced capacity of LDCs, SIDS and LLDCs on telecommunication/ICT development

## Progress achieved



## Outputs

### D.4-1 Capacity building<sup>65</sup>

In 2018, BDT carried out capacity-building activities, which strengthened skills and enhanced knowledge in the field of telecommunication/ICT among the ITU membership.

**Delivery of training and partnerships:** Capacity-building activities are delivered in close collaboration with partners, including Centres of Excellence (CoEs), the private sector, academia and other training institutions. The [ITU Academy](#) platform serves as the main delivery channel for ITU's training activities.

The Centres of Excellence (CoEs) network is the main channel of training delivery under the ITU Academy. In 2018, around 1,840 participants were trained through 55 courses delivered by the CoE network. Furthermore, in collaboration with other partners, 37 training and capacity-building activities were delivered in 2018 to a total of 1 883 participants. This included 17 activities at the regional level. The capacity-building activities concentrated on these main areas: policy and regulation, broadband access, cybersecurity, ICT applications and services, spectrum management, Internet governance,

<sup>65</sup> WTDC Res. 1, 5, 9, 15, 20, 21, 22, 30, 32, 33, 36, 40, 50, 59, 73, 77; PP Dec. 5, 13; PP Res. 25, 71, 72, 137, 139, 140, 176, 188, 189, 197, 199, 202; Council R1143; WTS Res. 54, 59, 72; WSIS Action Lines C4 and §§ 8, 22, 23a, 26g, 49, 51, 65, 72h, 86, 87, 90c, d, f, 95, 114b of the Tunis Agenda; SDGs 1, 2, 3, 4, 5, 6, 9, 12, 13, 14, 16, 17.

innovation, digital broadcasting, conformance and interoperability, cloud computing, quality of service, and ICT accessibility.

ITU continued to deliver training for developing countries in cooperation with its partners, including the African Advanced Level Telecommunications Institute (AFRALTI), the International Telecommunications Satellite Organization (ITSO), Rohde and Schwarz and the International Centre for Theoretical Physics (ICTP) in Italy. In the past year, those training activities focused on the areas of satellite communication, spectrum monitoring and spectrum management and Internet of Things. In partnership with the United Kingdom's Academy (UKTA), ITU, through ITU Academy, continued to deliver the online Master of Communication Management degree programme.

New partnership agreements were concluded with Wayfindr to deliver training on the design of audio-based navigation systems for people with visual impairments, as well as with four partners in Latin America on the delivery of the Strategic Telecommunication Management Programme.

**Development of training courses:** Under the framework of the ITU Academy, BDT developed high quality, comprehensive training programmes. In 2018-2019, training programmes on the following topics were developed, updated, finalized or will start: spectrum management, quality of service, ICT and climate change, and Internet of Things (IoT).

**Global ICT Capacity Building Symposium:** The [2018 Global ICT Capacity Building Symposium \(CBS\)](#) was held in Santo Domingo, Dominican Republic, from 18 to 20 June 2018, under the theme "Developing skills for the digital economy and society." The Symposium is the main global event for capacity development in the field of ICTs. The outcomes of the Symposium provide strategic guidance to the national and international community on issues of skills development in the field of ICTs and digital technologies. The Symposium also contributed to strengthening collaboration between ITU, the public and private sectors, business and the academic communities in developing capacities for the digital future.

**Capacity Building in a Changing ICT Environment:** The publication, "Capacity Building in a Changing ICT Environment 2018", was released in 2018. The [second issue](#) features articles highlighting different levels of required skills, from basic digital skills that are aimed at raising ICT awareness and enabling use of simple applications, to advanced digital skills targeted at more complex requirements, such as network management and data analytics.

#### D.4-2 Telecommunication/ICT statistics<sup>66</sup>

BDT hosts the world's most comprehensive collection of ICT data and statistics in various thematic areas, including ICT infrastructure, access and usage, policy and regulation and cost and tariff policy issues. The work of ITU under this output has resulted in an enhanced availability and dissemination of internationally comparable, timely ICT statistics.

The 16th World Telecommunication/ICT Indicators Symposium (WTIS) took place in Geneva in December 2018. WTIS-18 attracted more than 320 participants from 85 countries, representing public and private organizations including ministries, regulators, national statistical agencies, universities and research institutions, telecommunication operators, ICT firms and regional and international organizations. WTIS-18 featured plenary sessions on the economic and social impact of ICTs, data needs for tracking the social impact of ICTs, enabling sustainable development through ICTs: leaving no one behind, data science and ICTs, the launch of the Measuring the Information Society Report, a report on the status of the new ICT Development Index, ICT skills for the future, new data needs for the digital economy, smart data for smart ICT regulation and policy-making and affordability of ICT services.

<sup>66</sup> WTDC Res. 1, 5, 8, 30, 33, 37, 43, 50, 51, 52, 57, 59, 60; PP Dec. 5, 13; PP Res. 25, 71, 72, 137, 139, 140, 176, 188, 189, 197, 199, 200, 202; ICT statistics are relevant to monitoring the implementation of all WSIS Action Lines of the Geneva Plan of Action and are referred to in §§ 112-119 of the Tunis Agenda; SDGs 4, 5, 9, 17.

In 2018, several statistical products were released to enhance information and the knowledge of policy-makers and other stakeholders on current telecommunication/ICT trends and developments.

- The latest edition of the [ITU World Telecommunication/ICT Indicators Database and the Yearbook of Statistics](#) were released in January 2019. The data will enable users to take informed decisions in the field of ICTs, based on internationally comparable statistics.
- The ITU/World Bank joint publication “[The Little Data Book on Information and Communication Technology 2018](#)” was released in July 2018.
- The 2018 data collections were completed successfully. Around 160 countries submitted responses to the WTI Long Questionnaire 2018, 84 countries responded to the ICT Household Long Questionnaire 2018 and 149 countries responded to the ICT Price Basket Questionnaire 2018. The WTI Short Questionnaire 2019 and ICT Household Short Questionnaire 2019 were sent to Member States at the beginning of 2019 and the ICT Price Basket Questionnaire was sent in March 2019.
- World and regional estimates of key ICT indicators were released at the end of 2018, including data on the percentage of the population using the Internet, which surpassed 50 per cent in 2018.
- The [Measuring the Information Society Report 2018](#) was launched during WTIS-18, featuring a chapter on ICT trends. It included an analysis of the measurement of ICT skills using results based on ITU household data and other sources. It also included an analysis of revenue and investment in the telecommunication sector and different metrics that ITU collects to track and compare the price and affordability of ICT services worldwide. The report has helped to enhance the knowledge of policy makers, investors and business people about current ICT market trends and to make evidence-based decisions by providing an accurate analysis of telecommunication/ICT developments worldwide.

ITU’s activities, under this output, continued to contribute towards increased cooperation and improved methodologies and international standards on ICT statistics through the work of the Expert Group on Telecommunication/ICT Indicators (EGTI) and the Expert Group on ICT Household Indicators (EGH). Meetings of EGTI and EGH took place in Geneva in October 2018.

Increased capacity and skills of producers of ICT statistics to carry out data collections, produce and analyse international comparable ICT indicators, was achieved through capacity-building activities.

ITU continues to be an active member of the Partnership on Measuring ICT for Development and together with UN Conference on Trade and Development (UNCTAD) and the UNESCO Institute for Statistics (UIS) is one of the three members of its Steering Committee.

#### D.4-3 Digital inclusion of people with specific needs<sup>67</sup>

BDT shared innovative strategies with all ITU members on building their national digital skills development strategies by publishing the ITU Digital Skills Toolkit on the ITU website. The Digital Skills Toolkit is available in the six ITU official languages along with e-pub and Kindle versions. Awareness on the Digital Skills Toolkit along with the joint ITU-ILO Digital Skills for Jobs Campaign of the global initiative on Decent Jobs for Youth, to incentivize stakeholders to train five million young women and men with job-ready digital skills, was shared with 1,250 ITU members and other stakeholders at different events, including the WSIS High Level Dialogue on Digital Skills, the Mobile Learning Week in Paris and the event on Digital Skills for Everyone: Accelerating Europe’s Competitiveness and Inclusive Growth in Brussels, Belgium.

<sup>67</sup> WTDC Res. 1, 5, 9, 11, 15, 20, 21, 22, 23, 30, 32, 55, 58, 68, 76, 77; PP Dec. 5, 13; PP Res. 25, 30, 32, 33, 34, 36, 37, 64, 70, 71, 131, 139, 140, 175, 184, 198, 202; WTSA Res. 55, 69; WSIS Action Lines C2, C4, C7, C8, and § 90 of Tunis Agenda; SDGs 1, 4, 5, 8, 9, 10, 11, 16, 17.

131 countries organized International Girls in ICT Day events in 2018, encouraging 57,748 girls participating in 2,186 events to take up ICT careers and studies. There were events in 20 countries of the African Region, 31 countries in the Americas region, ten countries in the Arab region, 22 countries in Asia-Pacific region, eight countries in the CIS region, and 30 countries in the Europe region. New countries joining the campaign in 2018 include Mongolia, Solomon Islands, Tajikistan, Timor-Leste, and Uzbekistan. ITU Sector Member Cisco organized events for 4,349 girls, and Microsoft organized events for 3,600. Germany, Netherlands, Italy, Spain, Senegal, Colombia, Guatemala, and Chile attracted the largest numbers of girls (listed in order of magnitude.)

Awareness was raised among over 1,500 ITU Members and stakeholders on ITU-D's activities and events and key resources were made available to support our Members in implementing ICT accessibility.

192 digital inclusion programmes and practices were shared on the Digital Inclusion Newslog during 2018, with 6,585 views of the newslog posts. Awareness was raised and these best practices were shared among ITU members through the weekly publication of innovative digital inclusion practices and strategies on the ITU-D Digital Inclusion.

Events were organized in support of regional initiatives on accessibility in Americas, Europe, Africa and Arab regions.

A set of three self-paced online training courses entitled "ICT Accessibility: the key to inclusive communication" were developed to provide a good understanding of ICT accessibility among all relevant stakeholders, focusing on related policies, regulations, technology trends, and public procurement rules. This course was developed in response to the outcomes of WTDC-17. Some 15 video tutorials on how to develop and remediate accessible digital documents were developed in English, French, and Spanish.

#### **D.4-4 Concentrated assistance to least developed countries (LDCs), small island developing states (SIDS) and landlocked developing countries (LLDCs)<sup>68</sup>**

BDT delivered concentrated assistance to the following LDCs, LLDCs, and SIDS: Afghanistan, Bolivia, Burundi, Guinea-Bissau, Eswatini, Haiti, Kiribati, Malawi, Myanmar, Paraguay, Sao Tomé and Príncipe, Solomon Islands, Somalia, South Sudan, Sudan, Suriname, Timor-Leste, Uganda, and Uzbekistan. Assistance was provided across all ICT-related activities, including in the areas of market regulatory reforms, emergency telecommunications and disaster response, gender equality, cybersecurity and ICT infrastructure, and spectrum management.

ITU reported on the progress that LLDCs have made in terms of ICT developments and provided input to the UN Secretary-General's Report on the Midterm Review of the Implementation of the Vienna Programme of Action.

<sup>68</sup> WTDC Res. 16, 17, 18, 21, 25, 26, 30, 33, 36, 37, 50, 51, 52, 53, 57, 60; PP Dec. 5, 13; PP Res. 25, 30, 32, 33, 34, 36, 70, 71, 123, 124, 125, 126, 127, 135, 159, 160, 161, 193, 202; WRC Res. 12; WCIT Res. 1; WSIS Action Lines C4, C7, and § 9, 23, 26, 49, 59, 87 and 95 of the Tunis Agenda; SDGs 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17.

## Objective D.5: Enhance environmental protection, climate-change adaptation and mitigation, and disaster-management efforts through telecommunications/ICTs

### Outcomes:

D.5-1: Improved availability of information and solutions for Member States, regarding climate-change adaptation and mitigation

D.5-2: Enhanced capacity of Member States in relation to climate-change mitigation and adaptation policy and regulatory frameworks

D.5-3: Development of e-waste policy

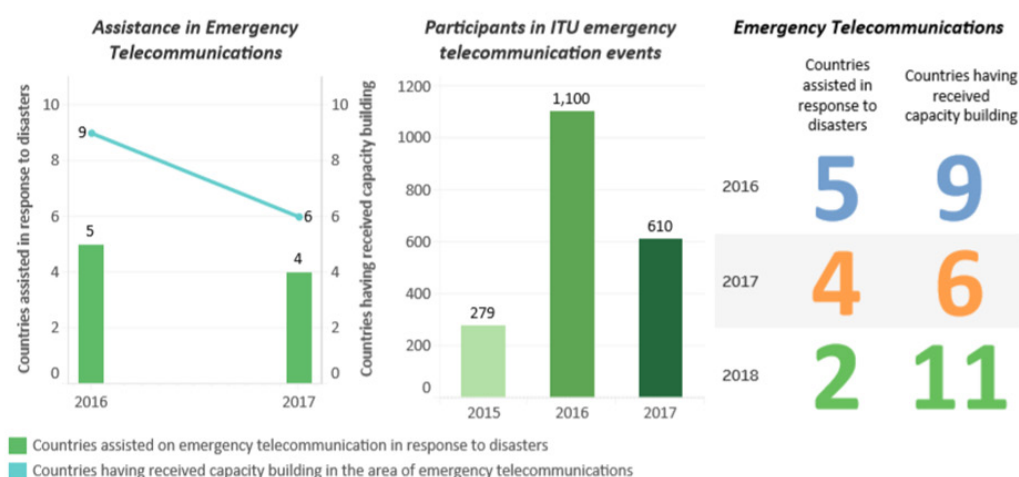
D.5-4: Developed standards-based monitoring and early-warning systems linked to national and regional networks

D.5-5: Collaboration to facilitate emergency disaster response

D.5-6: Established partnerships among relevant organizations dealing with the use of telecommunication/ICT systems for the purpose of disaster preparedness, prediction, detection and mitigation

D.5-7: Increased awareness of regional and international cooperation for easy access to, and sharing of, information related to the use of telecommunications/ICTs for emergency situations

### Progress achieved



### 2nd Global Forum on Emergency Telecommunications (GET-2016); SAVING LIVES

Countries represented

70

Participants

500

### Global ICT Human Capacity Building Symposium (2018)

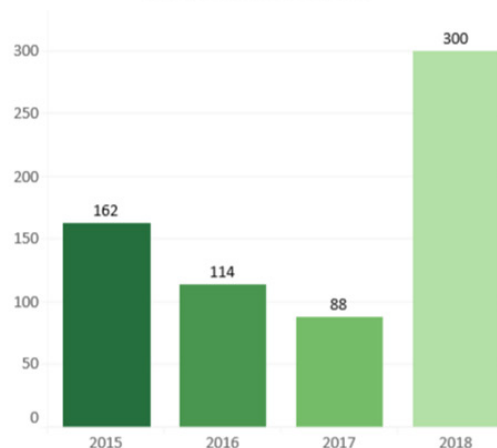
Countries represented

36

Participants

331

### Indigenous People Trained



## Outputs

### D.5-1 ICTs and climate-change adaptation and mitigation<sup>69</sup>

BDT builds capacity in the area of climate change and e-waste by organizing workshops and trainings, including in the area of e-waste statistics, electromagnetic fields, climate change, disaster management and the role of ICTs for climate change mitigation.

ITU continues to strengthen its work with the Global E-waste Statistics Partnership (GESP), which includes ITU, the United Nations University (UNU) and the International Solid Waste Association (ISWA). Together, this partnership is developing a website portal to publish e-waste related data and information. The portal is expected to be launched in March 2019.

In March 2019, within the framework of GESP, ITU will undertake a regional project to produce the E-waste Monitor for the Arab Region, to review the current situation of e-waste management in the Arab States.

BDT is an active member of the Environment Management Group (EMG) and a key driver of the E-waste Coalition, which was launched as part of a high-level dialogue session on “Building the E-waste Coalition” during the WSIS Forum 2018. Bringing together seven heads of UN agencies working in the area of e-waste, the E-waste Coalition is developing a new vision towards the circular economy, with a focus on e-waste. This initiative increases awareness about the need to address the challenges of e-waste and provides policy guidance to the public and private sector. It is supported by the World Business Council for Sustainable Development (WBCSD) and the World Economic Forum (WEF). BDT is currently preparing for three additional UN agencies (WHO, UN Habitat, and ITC) to join the E-waste Coalition, which will take place at the WSIS Forum High-Level Dialogue in 2019.

The E-waste Coalition, together with the WEF and the WBCSD, published a new report on A New Circular Vision for Electronics: Time for a Global Reboot. The ITU Secretary-General took part in a press conference at the 2019 Annual Meeting of the WEF in Davos to mark the launch of this joint report.

BDT finalized the implementation of the e-waste Pilot Plant Project that was jointly developed with University of La Plata in Argentina. The plant provides concrete responses to the E-Waste problems in cities in line with the Sustainable Development Goals. This project included the development of a report on Successful Electronic Waste Management Initiatives, which provides information of different e-waste management initiatives in six different countries around the world.

### D.5-2 Emergency telecommunications<sup>70</sup>

A Multi-stakeholder Forum on the Role of Telecommunication/ICTs for Disaster Management and Risk Reduction for the Caribbean Islands, organized by ITU and hosted by the Ministry of Information, Science, Technologies and Communications of Dominica, took place in Roseau, Dominica, from 4 to 6 December 2018. The event provided an opportunity for policy-makers and other main stakeholders and participants involved in disaster management in the Caribbean region, to debate and adopt concrete strategies on how ICTs support disaster risk reduction and management activities. Best practices, challenges, and lessons learned were shared by all the participating agencies from different islands across the Caribbean Region. Emphasis was made on the need and importance of developing and implementing national emergency telecommunication plans at a national level and to develop standard operating procedures, as well as in implementing Early Warning (EW) and alerting systems across the region.

<sup>69</sup> WTDC Res. 17, 21, 30, 32, 37, 50, 52, 53, 66; PP Dec. 5, 13; PP Res. 25, 71, 182; WTSA Res. 73; WSIS Action Lines C7; SDGs 3, 5, 9, 11, 13, 14, 15.

<sup>70</sup> WTDC Res. 1, 5, 17, 21, 30, 32, 34, 37, 50, 52, 53, 69; PP Dec. 5, 13; PP Res. 25, 37, 71, 98, 136, 140, 182, 202; WRC Res. 646, 647; WCIT Res. 2; WSIS Action Lines C7; SDGs 3, 5, 9, 11, 13, 14, 15.



A national workshop on the Role of Telecommunication/ICTs for Disaster Management and Risk Reduction, took place in Dar es Salaam, Tanzania from 15 to 16 January 2019. The workshop was jointly organized by the Tanzania Communications Regulatory Authority and ITU. The objective of the workshop was to raise awareness on the need to enhance ICT use for disaster management and risk reduction in the country as well as to address key issues related to the best use of ICTs for monitoring and alerting. The event also served as a platform to exchange ideas and practices on the work that is being carried out by different national humanitarian organizations, such as the National Red Cross and Disaster Management Commission. The private sector operators shared the progress they have made in terms of the readiness of their (fixed and mobile) networks in the case of disasters.

The 3rd Global Forum on Emergency Telecommunications (GET-19)- Innovating together to save lives: using technologies in disaster management, organized by ITU and hosted by the information and Communication Technologies Authority (ICTA) of Mauritius, took place from 6 to 8 March 2019, in Balaclava. The event, which brought together about 180 participants, highlighted the link between ICTs, disaster risk reduction, and development. It showed how incredible growth in ICT networks and services and innovation in technologies created opportunities for saving lives, reducing risks and limiting the impact of disasters. It discussed disaster risk reduction strategies, national emergency telecommunication planning and policies. It highlighted the role of new technologies, such as big data, Internet of Things, robotics, and Artificial Intelligence. The event also emphasized the needs, opportunities, and challenges of partnerships and cooperation for ICTs in the humanitarian context, including shaping existing partnerships between the ICT sector, governments and the humanitarian community. GET-19 discussed how humanitarian organizations can leverage technology to prepare and respond more effectively and to help victims of conflict or humanitarian crises.

GET-19 was preceded by a pre-event workshop on Common Alerting Protocol (CAP) which took place on 5 March 2019. This workshop highlighted the benefits of CAP and shared best practices and lessons learned on creating an enabling environment for leveraging CAP. The workshop highlighted and demonstrated that regardless the type of hazard, CAP emergency messages can quickly and efficiently warn people at risk, using all available communication technologies.

In March 2019, ITU published a new report on ‘[Disruptive Technologies and their use in disaster risk reduction and management](#)’. The report illustrates how disruptive technologies today are refining processes by spreading critical information more quickly, improving understanding of the causes of disasters, enhancing early warning systems, assessing damage quickly and adding to the knowledge base of the social behaviours and economic impacts after a crisis strikes. The report also highlights the importance of regulation, training, scaling and building partnerships. Several recommendations are provided, among others, to include the need for systemization and standardization to improve the application of technology and a global repository featuring information on how digital technologies are being applied to disaster management.

## 6 Inter-Sectoral objectives and results achieved

Inter-Sectoral Objectives				
I.1 Enhance international dialogue among stakeholders	I.2 Enhance partnerships and cooperation within the telecommunication/ICT environment	I.3 Enhance identification and analysis of emerging trends in the telecommunication/ICT environment	I.4 Enhance/promote recognition of (the importance of) the telecommunication/ICTs as a key enabler of social, economic and environmentally sustainable development	I.5 Enhance access to telecommunications/ICTs for persons with disabilities and specific needs



*Linkage of inter-sectoral activities to the ITU results framework:*

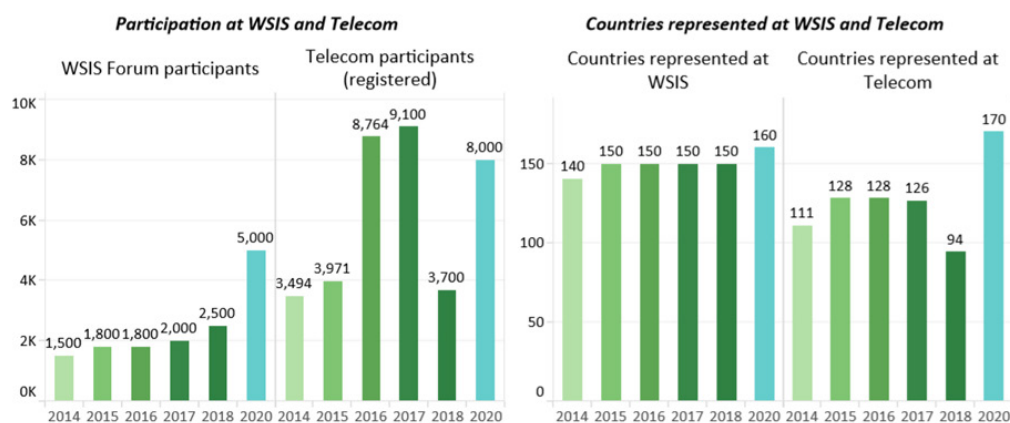
Accessibility	Objective I.5
Broadband Commission for Sustainable Development	Objective I.1
Climate change	Objective I.4
Cybersecurity	Objective I.2
Emergency telecommunications	Objective I.4
Empowerment of Youth through ICTs	Objective I.4
Gender	Objective I.4
Internet issues	Objective I.2
ITU and the United Nations	Objective I.4

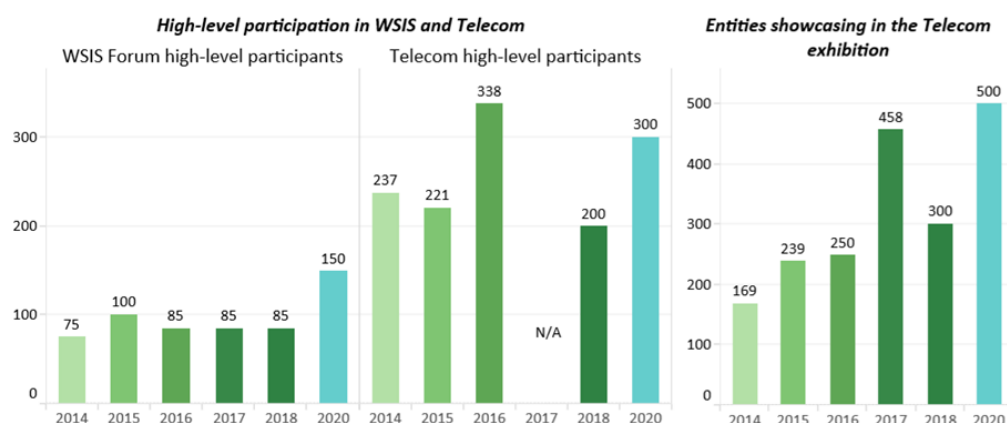
## Objective I.1: Enhance international dialogue among stakeholders

### Outcomes:

**I.1-1:** Increased collaboration among relevant stakeholders, aiming to improve the efficiency of the telecommunication/ICT environment

### Progress achieved





## Outputs

**I.1-1** Intersectoral world conferences, fora, events and platforms for high-level debate (such as such as World Conference on International Telecommunications (WCIT), World Telecommunication/ ICT Policy Forum (WTPF), World Summit on the Information Society (WSIS), World Telecommunication and Information Society Day (WTISD), ITU Telecom, 150th Anniversary of ITU

### World Summit on the Information Society (WSIS)

Work is ongoing on the preparation of the WSIS Forum 2019.

### ITU TELECOM

ITU Telecom World 2018 took place from 10 to 13 September in Durban, South Africa. The event was hosted by the Government of South Africa, represented by its Department of Telecommunication and Postal Services. It was the first time that an ITU Telecom World event had been hosted in the Africa region and the event brought together nations, leading players and SMEs from across Africa and round the world. The event explored the theme of “Innovation for smarter digital development”. Full details may be found in [C19/19](#).

### ITU/UNESCO Broadband Commission for Sustainable Development

The Broadband Commission held its annual fall meeting in New York on 22-23 September. It was preceded by three working group sessions and an informal brainstorming meeting. Three groups (digital health, digital entrepreneurship and epidemic preparedness) released their concluding reports. The Commission launched further the working groups for the 2019 to focus on child safety online, connectivity in Africa, and the freedom of expression online. The Commission debated, during its main plenary, on how to advance efforts to connect those with no access to the Internet. Every year, the Broadband Commission publishes its annual ‘[State of Broadband](#)’ report. Launched in September 2018, the report showed a growing number of governments benchmarking the status of broadband in their national broadband plans. For the first time, at least 15 countries have strategies in place for promoting the safe use of Artificial Intelligence. In January 2019, a special session of the Broadband Commission and the World Economic Forum was held at the WEF Annual Meeting 2019 in Davos under the theme: ‘Connecting the world in the 4th Industrial Revolution’.

## Objective I.2: Enhance partnerships and cooperation within the telecommunication/ICT environment

### Outcomes:

I.2-1: Increased synergies from partnerships on telecommunication/ICTs

### Progress achieved

### Outputs

#### I.2-1: Knowledge-sharing, networking and partnerships and I.2-2 Memoranda of understanding (MoUs)

##### Connect 2020

Connect 2020 is the framework adopted by ITU Member States in 2014, in alignment with ITU Strategic Plan 2016-2019. During PP-18, in October 2018, a new Strategic Plan for 2020-2023 was adopted and the framework (now called “Connect 2030”) has been enhanced.

##### Activities in support of tech SMEs<sup>71</sup>

SMEs play a key role in ensuring sustainable economic growth and are often the source of innovative ICT-enablers. The decision of PP-18 to introduce reduced fees for SME Associates (following a successful pilot project launched by Council 2017 to test SME participation) will further contribute to this trend. That said, beyond the issue of revenue, it is important to note that an increasingly diversified membership will help ITU better reflect and adapt to changes in the marketplace, ensuring greater relevancy of the Union’s study groups and their outputs, including Recommendations and best practices. It is also hoped that reduced fees for SMEs will also help increase industry participation from developing countries.

##### Internet Issues<sup>72</sup>

A separate report to the Council (C19/33) summarizes ITU’s activities since Council 2018 related to Resolutions 101, 102, 133, and 180. It also includes activities related to Res. 206 (rev. Dubai 2018). Activities reported include those related to: (a) Internet Protocol (IP) Networks, the development of next generation networks (NGN) and future Internet, including policy and regulatory challenges; (b) IPv6; (c) Internet-related public policy issues including the management of domain names and addresses; (d) ENUM; (e) International Internet Connectivity (IIC)/Internet Exchange Points (IXPs); and (f) OTT.

## Objective I.3: Enhance identification and analysis of emerging trends in the telecommunication/ICT environment

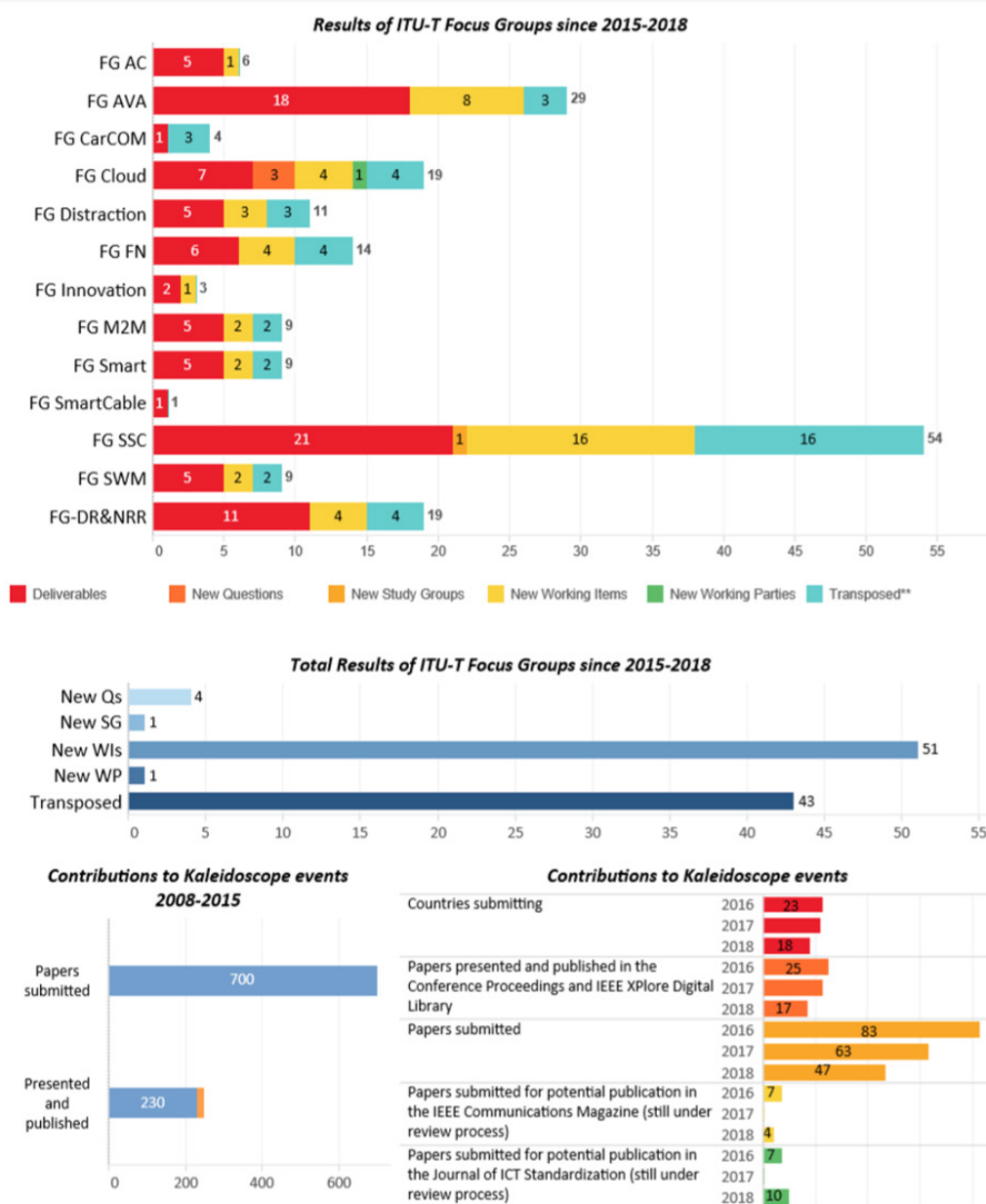
### Outputs:

I.3-1 Intersectoral initiatives and reports on emerging telecommunication/ICT trends and other similar initiatives

<sup>71</sup> WSIS Action Line C2; SDG Target 9.

<sup>72</sup> PP Res. 101, 102, 133, and 180; WSIS Action Lines C2, C4, C5, C6; C7, C8 and C9; SDG Targets 9.1, 9.c.

## Progress achieved



## Outputs

### I.3-1 Intersectoral initiatives and reports on emerging telecommunication/ICT trends and other similar initiatives<sup>73</sup>

The timely identification and study of technology, policy and regulatory and social and economic aspects of emerging telecommunication/ICT trends is underway through initiatives in all three Sectors and General Secretariat.

<sup>73</sup> PP Res. 200; WSIS Action Lines C2, C4; SDG Target 9c.

### *Intersectoral Group on Emerging ICT Trends*

In 2018, the Intersectoral Group on Emerging ICT Trends met three times and discussed topics, such as ICT forecast for 2018, trends in data protection- focusing on EU's General Data Protection Regulation (GDPR), and constellation for satellite communications and information. It also helps identify potential new industry and academia members and invites them to join ITU.

### *Issue Paper on Emerging Trends*

In September 2018, ITU released a new paper titled *Assessing the Economic Impact of Artificial Intelligence*, which is first in a new series of ITU's *Issue Paper on Emerging Trends*. It identifies and recognizes emerging trends in the telecommunication/ICTs environment and shares the information with all ITU membership to enhance our capacity to understand how the development of telecommunication/ICT shapes society. Contributed by the McKinsey Global Institute, the first paper offers a framework for thinking about the economic impact of AI. It puts this into a research context and highlights the dynamically changing world of work, in light of automation, the need for a skills revolution, and the increasing and potential use of AI by different stakeholders.

### *Briefing on Emerging ICT Trends*

By organizing the annual *ICT Economic and Industry Expert Roundtable* at the ITU Telecom World, ITU has enhanced its dialogue with leading economic experts in the field of telecommunication/ICT industry. At Telecom 2018, in Durban, South Africa, ITU partnered with UNIDO to organize the fourth ICT Economic and Industry Expert Roundtable, to discuss *Leveraging Emerging Technologies for Sustainable Development*, especially focusing on emerging markets in Africa. The outcome of this meeting was shared with UNIDO and shared at the Third Industrial Development Decade for Africa (IDDA-3) High Level Meeting, during the UN General Assembly in New York in September 2018.

### *UN Activities on Artificial Intelligence*

A joint-effort between ITU and 32 UN agencies and bodies, all partners of the second AI for Good Global Summit, the "AI for Good UN Partners Meeting" chaired by Mr Houlin Zhao, Secretary-General of ITU. It was organized on 24 September 2018 in the UNFPA headquarters in New York. As a follow-up, the report on *UN Activities on Artificial Intelligence* was released in October 2018. This report provides information about the diverse and innovative activities related to artificial intelligence across the UN system and outlines how AI is being used to fight hunger, mitigate climate change, and advance health for all. Examples are included of how UN agencies experiment with AI to improve response to disease outbreaks, monitor energy use in real-time, and facilitate the transition to smart sustainable cities.

## **Objective I.4: Enhance/promote recognition of (the importance of) the telecommunications/ ICTs as a key enabler of social, economic and environmentally sustainable development**

### **Outcomes:**

**I.4-1:** Increased multilateral and inter-governmental recognition of telecommunications/ICTs as a cross-cutting enabler for all three pillars of sustainable development (economic growth, social inclusion and environmental balance) as defined in the outcome document of the United Nations Rio+20 Sustainable Development Conference, and in support of the UN mission for peace, security and human rights

## Progress achieved

### Outputs

#### I.4-1 Reports and other inputs to UN inter-agency, multilateral and intergovernmental processes<sup>74</sup>

##### ITU and the United Nations

ITU continued to follow, participate in, and provide inputs to the global follow-up and review process of Agenda 2030 and the Sustainable Development Goals (SDGs), carried out annually at the High-Level Political Forum (HLPF). This included ITU Council input and engagements with UN System entities and other stakeholders for side events to promote ICTs for the SDGs. ITU also enhanced its outreach with countries presenting their voluntary national review reports to raise the visibility of the critical role of ICTs as an enabling tool for achieving and accelerating progress for sustainable development. A full report is available in [C19/INF/8](#).

##### Environmental protection<sup>75</sup>

ITU continues to contribute to the work of the UN system by regularly participating in the major UN processes and conferences on this topic, such as the UN Framework Convention on Climate Change (UNFCCC) and UN Environment Assembly. ITU-T is working together with GeSI, SBTi, and IEA on a draft ITU-T Recommendation on “GHG emissions trajectories for the ICT sector compatible with the UNFCCC Paris Agreement”.<sup>76</sup>

BDT builds capacity in the area of climate change by organizing workshops and trainings, including in the area of climate change, disaster management, and the role of ICTs for climate change mitigation.

##### e-health<sup>77</sup>

The mHealth for NCD joint ITU-WHO “Be Health, Be Mobile” initiative continues to provide support to eleven countries to run mHealth projects for tobacco cessation, diabetes, cervical cancer, and respiratory diseases. More activities are described in Section D.3-2.

##### Smart Sustainable Cities<sup>78</sup>

Coordinated by ITU, UNECE and UN-Habitat and supported by another 13 UN bodies, the United for Smart Sustainable Cities (U4SSC) initiative advocates for ICTs – and ICT standards in particular – to play a definitive role in the transition to smart sustainable cities. The collaboration encouraged by the initiative has led more than 50 cities to evaluate their progress in meeting the objectives of their smart city strategies using “Key Performance Indicators for Smart Sustainable Cities” based on ITU-T Recommendations. ITU case studies share insight into the evaluations undertaken by Dubai, Singapore, and Moscow.<sup>79</sup>

##### E-waste<sup>80</sup>

ITU continues to contribute to the work of the UN system to tackle e-waste and participates in initiatives such as the Conference of the Parties to the Basel Convention, Solving the E-waste Problem (StEP) Initiative, and Global Partnership for Waste Management (ITU chairs the partnership’s working

<sup>74</sup> PP Res. 200; WSIS Action Lines C2, C5, C6; SDG Target 9.

<sup>75</sup> PP Res. 25, 71, 172, and 182; WSIS Action Line C7 (e-environment); SDG Targets 1.5, 2.4, 11.6, 12.2, 12.5, 12.6, 12.a.

<sup>76</sup> PP Resolutions 25, 71, 172, and 182; WTSR Resolution 73; WSIS Action Line C7 (e-environment); SDG Targets 1.5, 2.4, 11.6, 12.2, 12.5, 12.6, 12.a.

<sup>77</sup> PP Res. 183; WSIS Action Line C7 (e-health); SDG Targets 1.3, 1.4, 1.5, 2.1, 2.1, 3.3, 3.8, 5.6, 5.b, 17.8, 17.19.

<sup>78</sup> WSIS Action Line C7 (e-environment); SDG Targets 11.3, 11.6, 11.a, 11.b.

<sup>79</sup> WTSR Resolution 98; WSIS Action Line C7 (e-environment); SDG Targets 11.3, 11.6, 11.a, 11.b.

<sup>80</sup> SDG Targets 6.3, 6.8, 11.6, 12.4, 12.5.

group on e-waste management). ITU also collaborates with UNIDO and the Secretariat of the Basel Convention on e-waste management projects focused on countries in Latin America.<sup>81</sup>

### Emergency Telecommunications<sup>82</sup>

The 3rd Global Forum on emergency Telecommunications (GET-19)- Innovating together to save lives: using technologies in disaster management, organized by ITU and hosted by the information and Communication Technologies Authority (ICTA) of Mauritius, took place 6-8 March 2019, in Balaclava.

A Multi-stakeholder Forum on the Role of Telecommunication/ICTs for Disaster Management and Risk Reduction for the Caribbean Islands, organized by ITU and hosted by the Ministry of Information, Science, Technologies and Communications of Dominica, took place in Roseau, Dominica from 4 to 6 December 2018.

A national workshop on the Role of Telecommunication/ICTs for Disaster Management and Risk Reduction, took place in Dar es Salaam, Tanzania from 15 to 16 January 2019. The workshop was jointly organized by Tanzania Communications Regulatory Authority and International Telecommunication Union.

### Artificial Intelligence

The AI for Good Global Summit is described in section I.3-1. An ITU Focus Group on 'Artificial Intelligence for Health', driven in close collaboration by ITU and WHO, is working towards the standardization of a framework and associated process for the performance benchmarking of 'AI for Health' algorithms.

### Intelligent Transport Systems

ITU collaboration with UNECE, the body responsible for global vehicle regulation, has built productive dialogue between ITU and UNECE's respective communities, assisted by the ITU-UNECE Future Networked Car Symposium. This collaboration is yielding valuable results, with UNECE now looking to ITU for technical standards in support of global vehicle regulation.

### Cybersecurity

A separate report to Council (C19/18) summarizes ITU's activities since Council 2018 in relation to Resolutions 130, 174, and 179, as well as ITU's role as sole facilitator for WSIS Action Line C5, and other related decisions by the membership. This report, organized around the five pillars of the Global Cybersecurity Agenda (GCA), shows the complementary nature of existing ITU work programmes and facilitates the implementation of BR, TSB, and BDT activities in this domain. Activities are related inter alia to the work of ITU-R and ITU-T Study Group 17 on Security Standardization, ITU's National CIRT programme and other capacity-building initiatives, and ongoing partnerships with other entities. The report also includes ITU's activities in the area of Child Online Protection (COP).

### Gender<sup>83</sup>

Some of the gender-related activities undertaken in 2018 are:

- African Girls Can Code Initiative (AGCCI).
- Girls in ICT Day.
- EQUALS: The Global Partnership to Bridge the Gender Digital Divide.
- EQUALS in Tech Awards.
- Broadband Commission launched in September 2018 its second progress report "Bridging the gender gap in internet and broadband access and use".

<sup>81</sup> WTS Resolution 79; SDG Targets 6.3, 6.B, 11.6, 12.4, 12.5.

<sup>82</sup> SDG Targets 1.5, 2.4, 11.5, 11.b.

<sup>83</sup> PP Res. 70; SDG Target 5b.

- Reinforcing Women's Participation in ITU's Meetings and Conferences.
- [International Gender Champions](#).
- Network of BR Women Engineers in the Space Sector
- UN-SWAP Reporting.

See report to Council ([C19/6](#)) for details on ITU's activities related to Resolution 70 (Rev. Dubai, 2018).

### Empowerment of Youth through ICTs<sup>84</sup>

ITU has advanced in the implementation of Resolution 198 (Rev. Dubai, 2018), which establishes ITU's mandate to empower youth through telecommunication/ICT. One of the main deliverables has been the strengthening of ITU's work with academic institutions. ITU currently has some 160 Academia members. ITU Members have expressed continued support for the ITU Journal. At PP-18, a new Resolution 207 (Dubai, 2018) on the ITU Journal: ICT discoveries was passed to establish collaborative efforts with the international research community to raise awareness of the ITU Journal worldwide. There were two special issues of the ITU Journal: ICT Discoveries released in 2018: Artificial Intelligence (March 2018) and Data for Good (December 2018). The third special issue of ICT Discoveries on radio wave propagation is being prepared and will be published by the end of 2019. Kaleidoscope 2018 "Machine learning for a 5G future" was hosted by *Universidad Tecnológica Nacional*, Santa Fe, Argentina. Young authors, of up to 30 years of age, presenting accepted papers received Young Author Recognition certificates.

ITU Membership is working together towards creating opportunities for young people to learn digital skills and to benefit from ICTs. To respond to those challenges, ITU and its membership acted through various initiatives and campaigns such as Girls in ICT Days, the Digital Skills for Decent Jobs for Youth Campaign, the ITU Digital Skills Toolkit, Hackathons and many other activities.

ITU continues to support the United Nations Secretary-General's Envoy on Youth, its active involvement in the United Nations Inter-Agency Network on Youth Development and its contribution to the United Nations System-wide Action Plan on Youth (ITU provided its input to the UN Youth Strategy: Youth 2030).

Further information about ITU's activities for young people is available at [www.itu.int/youth](http://www.itu.int/youth).

## Objective I.5: Enhance access to telecommunications/ICTs for persons with disabilities and specific needs

### Outcomes:

I.5-1: Increased availability and compliance of telecommunication/ICT equipment, services and applications with universal design principles

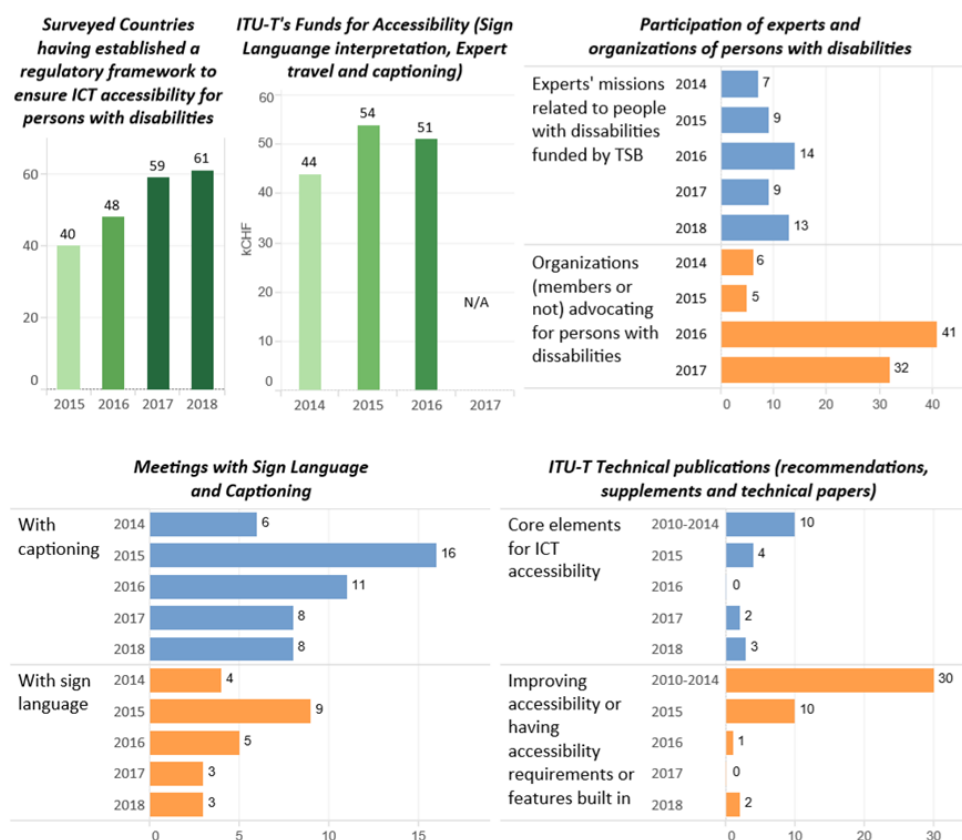
I.5-2: Increased engagement of organizations of persons with disabilities and specific needs in the work of the Union

I.5-3: Increased awareness, including multilateral and inter-governmental recognition, of the need to enhance access to telecommunications/ICTs for persons with disabilities and specific needs

<sup>84</sup> PP Res. 179, 198; SDG Target 4, 9.



## Progress achieved



## Outputs

I.5-1 Reports, guidelines, and checklists relating to accessibility of telecommunications/ICTs; I.5-2 Mobilization of resources and technical expertise, for example, through promoting greater participation in international and regional meetings by persons with disabilities and specific needs; I.5-3 Further development and implementation of the ITU Accessibility Policy and related plans; I.5-4 Advocacy, both at UN level and at regional and national levels<sup>85</sup>

ITU continues to produce technical work in all three Sectors related to this inter-sectoral objective. This work has resulted in the publication of new resources and handbooks, such as the Handbook on Digital Terrestrial Television Broadcasting networks and systems implementation. In addition, ITU has developed new capacity-building materials to promote the adoption of accessible solutions, such as the publishing of 15 video tutorials on development and remediation of accessible digital content or the development of new self-paced training courses in “ICT Accessibility – The Key to inclusive communication”, delivered through ITU Academy. ITU has also organized a series of regional events, Accessible Americas, held annually since 2015 and the newly created event series, Accessible Europe, initiated in 2018. ITU has also supported advocacy actions at the level of the UN Convention on the Rights of Persons with Disabilities (UN CRPD). Further information is available at [www.itu.int/accessibility](http://www.itu.int/accessibility).

<sup>85</sup> PP Res. 175; SDG Targets 4, 8, 9.

## 7 Enablers of the Activities of the Union

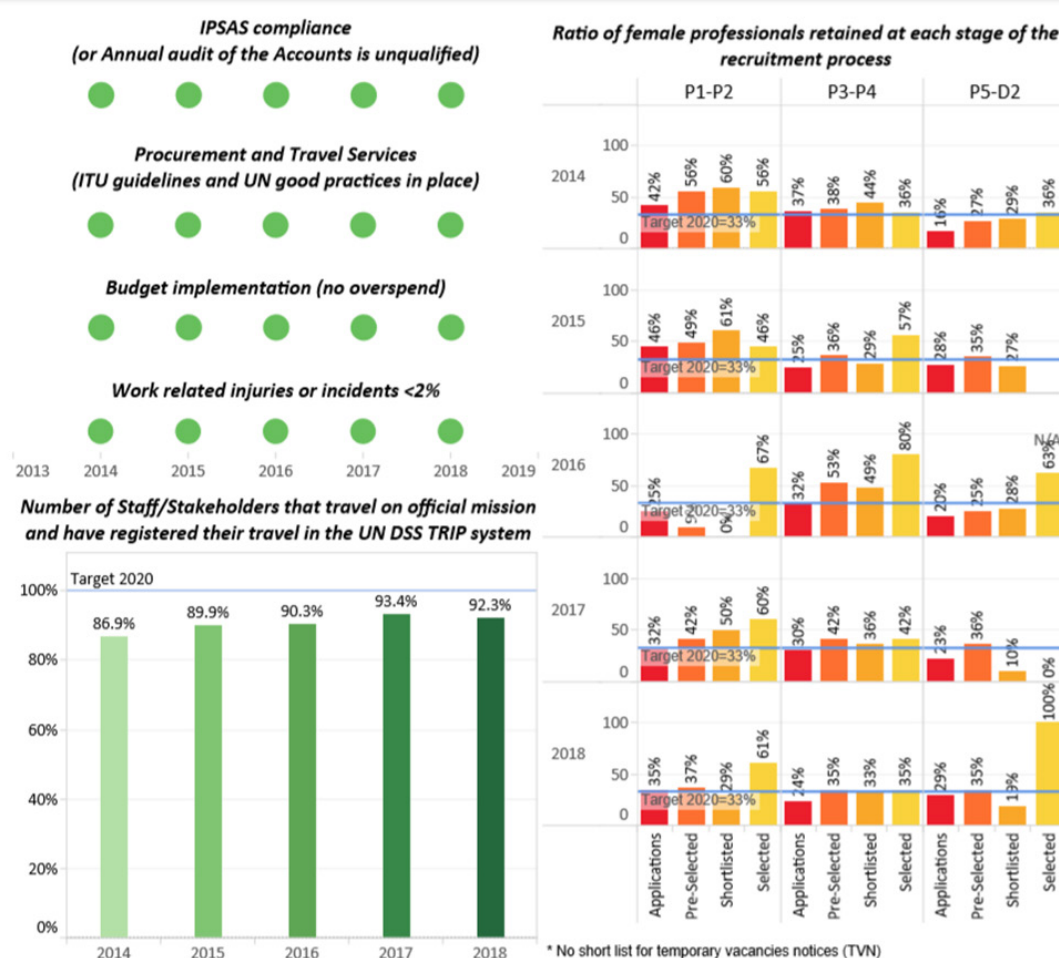
This section will report on progress of Enablers and Support Services provided by the General Secretariat.

**Enabler E.1: Ensure efficient and effective use of human, financial and capital resources, as well as a work-conducive, safe and secure working environment**

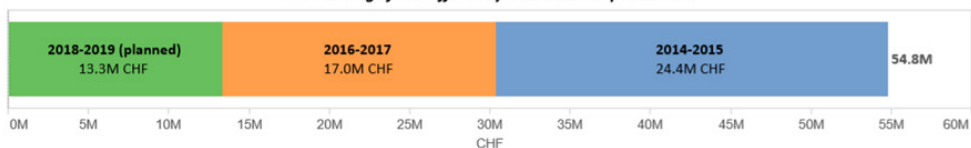
### Outcomes:

E.1: Efficient and effective use of human, financial and capital resources, as well as a work-conducive, safe and secure working environment

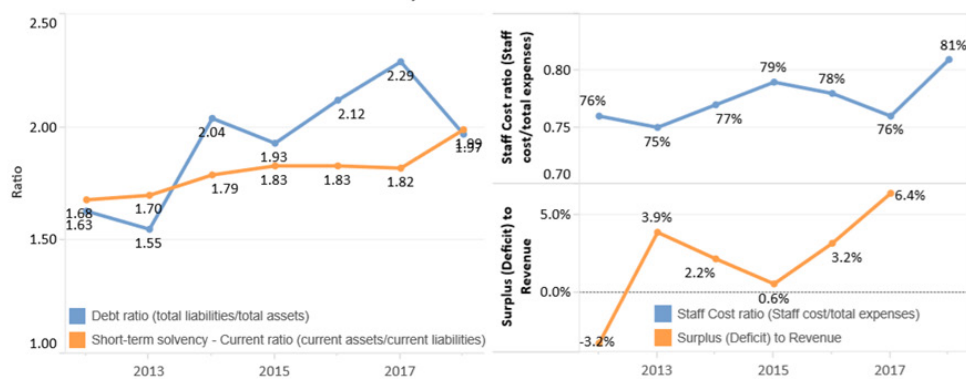
### Progress achieved

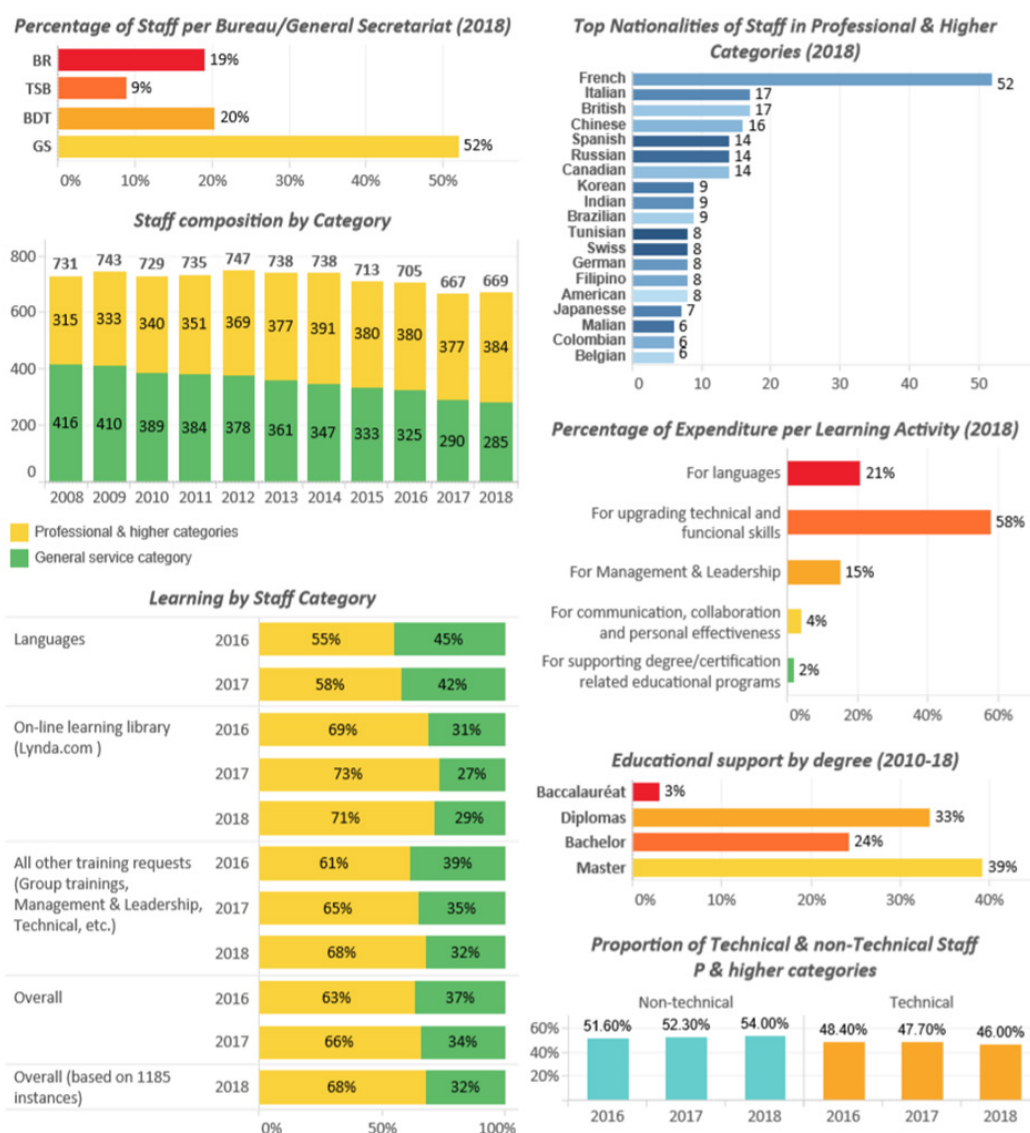


### Cost Savings from Efficiency Measures Implemented



### Key Financial Indicators





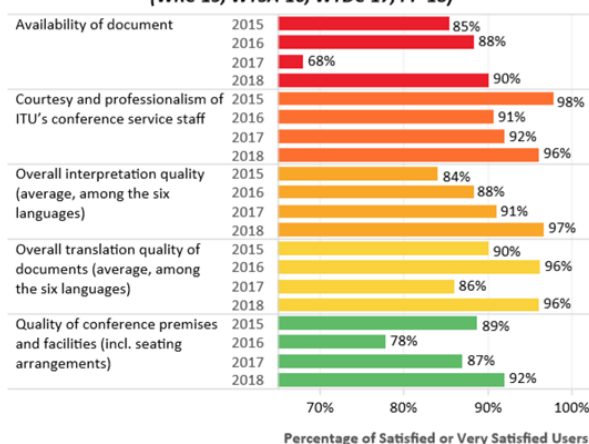
Enabler E.2: Ensure efficient and accessible conferences, meetings, documentation, publications and information infrastructures

#### Outcomes:

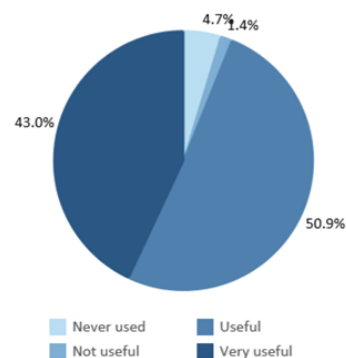
E.2: Efficient and accessible conferences, meetings, documentation, publications and information infrastructures

## Progress achieved

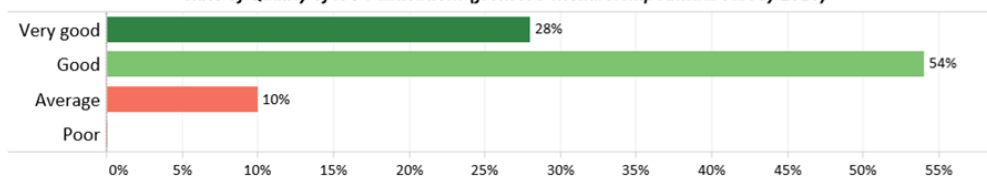
**User satisfaction with events  
(WRC-15, WTSA-16, WTDC-17, PP-18)**



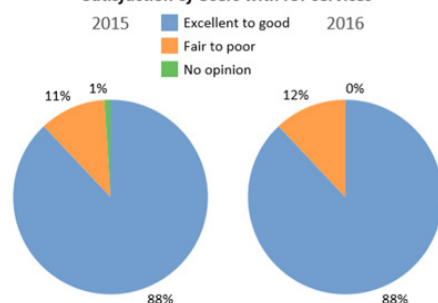
**User appreciation of usefulness of ITU publications (2017)**



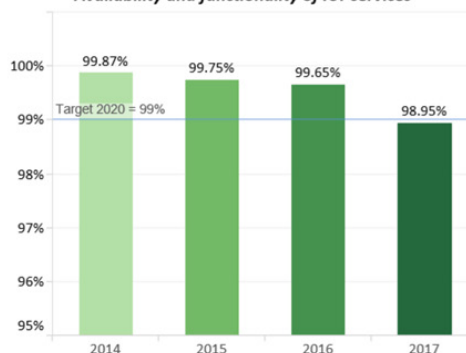
**Rate of Quality of ITU Publications (from ITU Membership Annual Survey 2018)**



**Satisfaction of Users with ICT services**



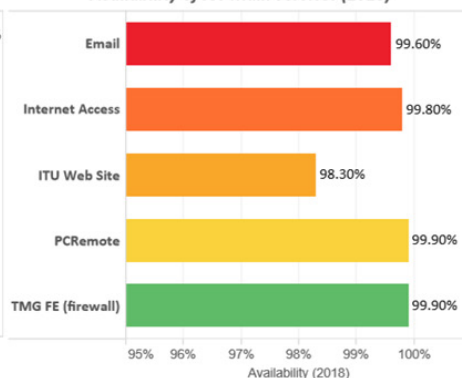
**Availability and functionality of ICT services**



**Satisfaction of Users with specific ICT services (2015)**



**Availability of ICT Main Services (2018)**

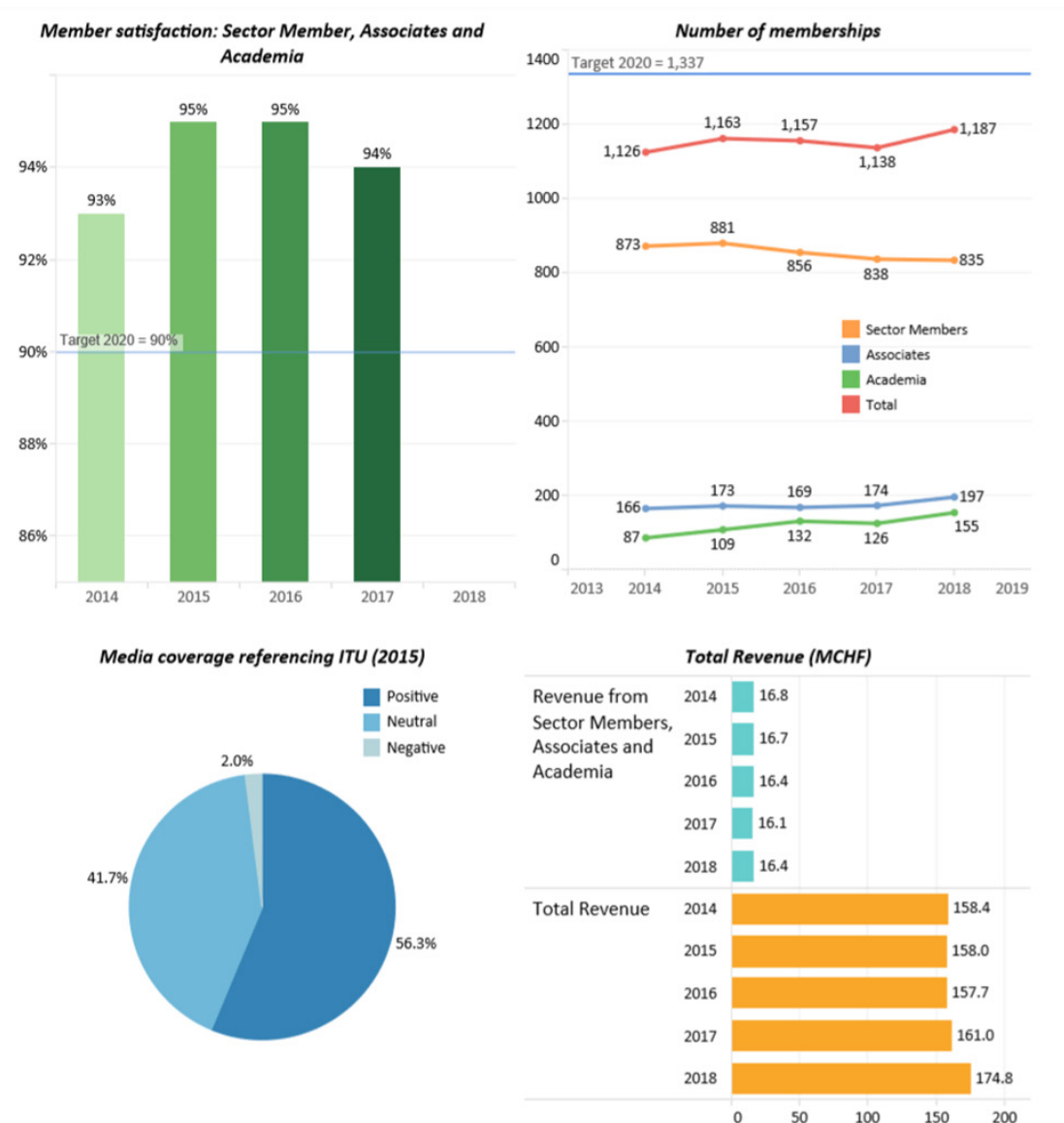


## Enabler E.3: Ensure efficient membership-related, protocol, communication and resource mobilization services

### Outcomes:

E.3: Efficient membership-related, protocol, communication and resource mobilization services

### Progress achieved



### Communication facts in 2018

In 2018, ITU News more than tripled its online traffic in terms of pageviews and users, thanks to timely, relevant content organized by topic.

YouTube growth was substantial for 2018 with 48.86 per cent growth in views compared to 2017. Soundcloud (podcasts) growth was flat.

Flickr showed a 10.9 per cent increase from 2017.

ITU has a higher social media engagement rate than GSMA and World Economic Forum.

ITU media coverage was slightly less positive and slightly more neutral while negative sentiments were virtually the same.

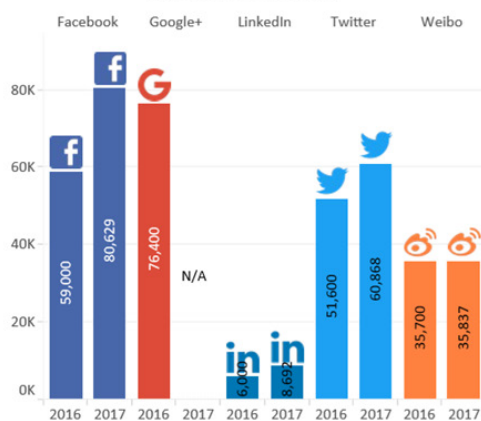
#### Number of Views/Plays of ITU Channels (2018)



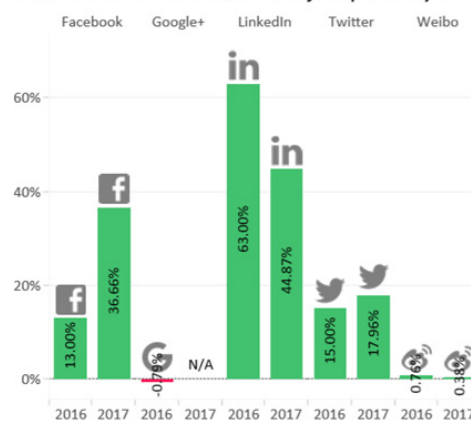
#### Year-on-year increase to ITU Blog traffic



#### Social Media - Followers



#### Social Media - Increase in Followers from previous year



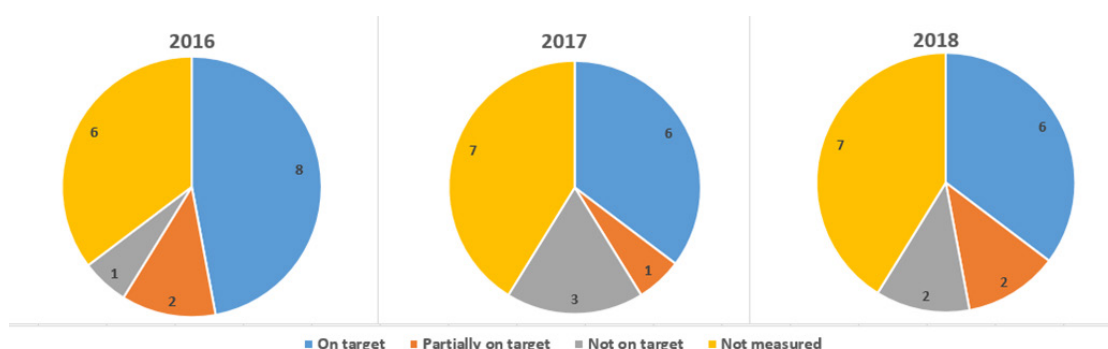
## Enabler E.4: Ensure efficient planning, coordination and execution of the strategic plan and operational plans of the Union

### Outcomes:

E.4: Efficient planning, coordination and execution of the strategic plan and operational plans of the Union

### Progress achieved

*Status of measurement and achievement of Connect 2020 targets*

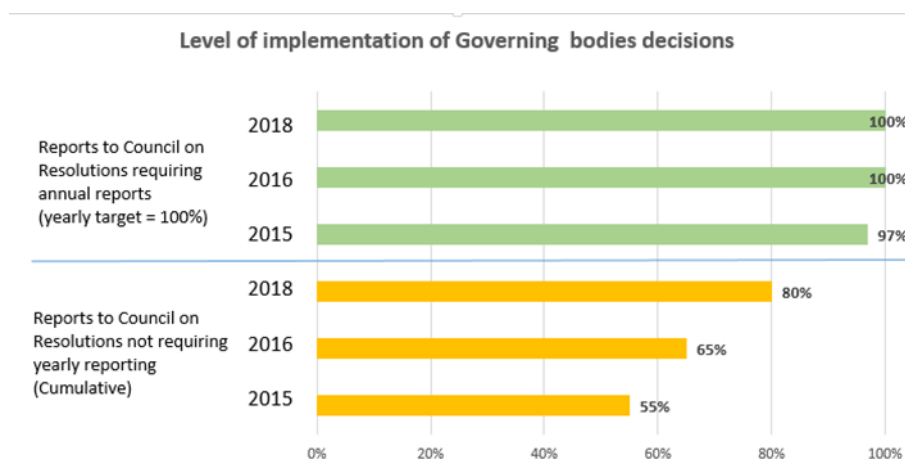


## Enabler E.5: Ensure effective and efficient governance of the organization (internal and external)

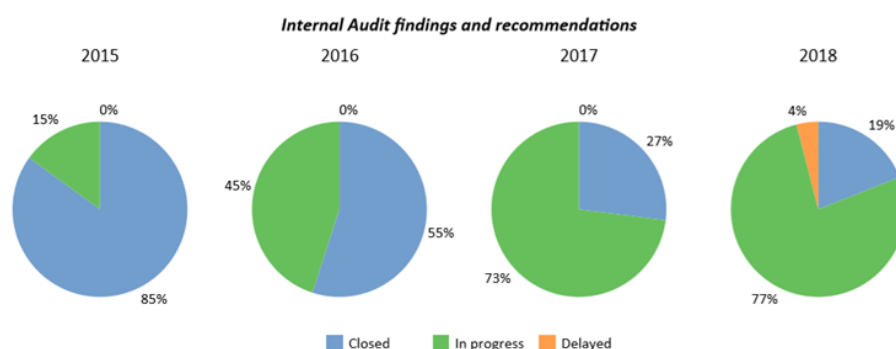
### Outcomes:

E.5: Effective and efficient governance of the organization (internal and external)

### Progress achieved







## 7.1 Support services/processes

### S.1 Management of the Union

The Coordination Committee (CoCo) and the Management Coordination Group (MCG) continued to meet regularly to discuss strategic issues and to manage ITU's administrative and financial affairs to ensure the most effective use of ITU's resources in the implementation of PP decisions. Further efforts were made to review and develop new policies and methodologies to modernize ITU management practices, with the aim to enhance and streamline ITU's business processes and implement results-based budgeting (RBB) and results-based management (RBM). The Strategic Planning and Membership Department (SPM) continued to take key responsibility for cross-sectoral matters in 2018 and provided overall planning and support services to CoCo, MCG, and the Inter-Sectoral Coordination Task Force (ISC-TF).

### S.2 Organization of conferences, assemblies, seminars and workshops (including translation and interpretation)

The C&P secretariat provided logistical, administrative and language support for all ITU events. From September 2018 to March 2019, C&P supported a total of 63 events in Geneva, and service was provided for 6,900 participants. This represents a total of 402 meeting days. During this period, more than 30,500 pages of documentation were translated and processed in the six official languages. Paperless meetings, e-participation and accessibility issues were pursued, allowing considerable reductions in reproduction costs, as well as enhancing operations and delivery methods and times.

During this period, interpretation was provided for 37 ITU events worldwide, resulting in as many as 2,170 interpreter-days.

### S.3 Publication services

A new workflow system (DCPMS) was put in place, offering a more effective follow-up of the publication process, reducing paper and providing a better coordination between C&P and the Sectors.

The graphic arm of publication services contributed to the development and implementation of the ONE ITU visual branding strategy.

Online and print production in an automated workflow continues. Fully accessible formats are regularly added to ITU e-Library (<https://www.itu.int/en/publications/Pages/Epub.aspx>) providing free online access to disseminate information and reach the wider, general public.

These publications are available for smartphones and tablets in addition to the traditional pdf and paper formats and include major publications such as Final Acts, Council Resolutions and Decisions, Handbooks, Reports and flagship titles such as Measuring the Information Society.

#### S.4 ICT services

The Information Services (IS) Department continues to provide effective operational services to support ICT functions for ITU events both within and outside Switzerland.

Information services were successfully provided for all major events, including PP-18, GSR, Council meetings, ITU Telecom World, WSIS Forum, and the AI for Good Global Summit, to mention a few. Continuous improvements have been made to the audio, video and Wi-Fi services in several of the meeting rooms at Headquarters to improve their support for electronic working methods and remote interventions.

Connectivity upgrades have been completed for all ITU Regional Offices to facilitate better regional support.

The implementation of ITU's corporate Customer Relationship Management (CRM) project continued in 2018. This has helped eliminate fragmented systems and now provides ITU with a platform for more efficient contact and account management, event registration and management, accreditation management, room management and communication/marketing.

The Proposal Management System was enhanced. This facilitated the standardization of the look and feel of ITU documents across the three Sectors and the General Secretariat, making it easier for Sector Members and Member States to follow the work of the Union. Business processes have been analysed to rationalize, optimize, and automate wherever possible.

A project was launched in collaboration with the business units in the Varembe building to ensure that ITU information is securely stored, maintained and will remain accessible throughout the upcoming new building project. With the need to provide ITU staff and members with greater access to information in electronic format, more than 300,000 scanned pages of historic documents were added to the History of ITU Portal ([www.itu.int/history](http://www.itu.int/history)) between January and December 2018. Over 1.5 million pages of material are now available through this knowledge base of ITU decisions, activities, and member input and participation over time.

#### S.5 Safety and security services

Effective safety and security, operational services were provided for the main ITU events both within and outside Switzerland. A Compliance, Data Protection and Privacy Officer post was created, to ensure that best practices are adhered to in these fields and to better manage biometric smartcards, access control and CCTV camera systems on behalf of ITU.

Other ongoing security enhancement projects and processes are as follows:

- a. Providing technical, physical safety, and security guidance to the new building project, which includes managing minimum security and safety requirements through joint discussions with the Host Country Authorities and then receiving official reports from the UN Department of Safety and Security.
- b. The Security Modernization Project is entering its final implementation stages at ITU Headquarters premises. This includes, for example, the roll-out of new biometric smartcards, the distribution of which started in late 2018 and is ongoing in 2019.
- c. Raising ITU's security profile/posture to align it with neighbouring UN agencies has been addressed. Since December 2018, an armed, uniformed security guard force is deployed at ITU buildings to screen visitors and incoming mail and packages, as well as provide internal and external patrols of the premises/compound.

- d. Security Assessment Mission (SAM) will continue visiting ITU's Regional and Area Offices in 2019.
- e. The ORMS Project to produce a bespoke Crisis Management Strategy for the ITU global operations as well as Business Continuity and Disaster Recovery Plans is entering its last year. All its deliverables are to set to be completed by December 2019.
- f. Continue to ensure the duty of care for staff, delegates and visitors by adhering to and being compliant with the UN Accountability Framework. ITU has been a part of the Framework for about 10 years.

## S.6 Human resources management

In 2018, in addition to its normal activities in the area of recruitment, organizational structure management, staff administration, learning and development, and staff-welfare, the Human Resources Management Department (HRMD), also concentrated its efforts on a range of other activities. The most significant follow.

HRMD engaged in a review of the 2010 Strategic Plan and undertook the preliminary work required to prepare a new plan, consistent with the Revision of Resolution 48 by the 2018 Plenipotentiary Conference. It required that the draft ITU strategic plan be approved by the 2018 Council session for submission to PP-18, with an eye towards identifying goals and outputs to be integrated into the Human Resources Strategic Plan (HRSP). Evaluation of the draft financial plan, proposed modifications to PP Decision 5, as well as proposals submitted by Member States to PP-18, in relation to Resolution 48, or other HR-related matters, was done to identify necessary elements to include.

In addition, HRMD ensured that the implementation of the new ITU Performance Management and Development System (E-PMDS) was completed. The department saw this process through development, approval and the implementation of new policies required for supporting the use of the new system. It oversaw the supervision and approval of the design and the configuration of the system needed for alignment between functionalities, policies, and regulatory requirements. Training and information programmes were developed to accompany the workforce in the implementation and use of the new system and the associated new policies. A communication campaign was also launched to raise awareness and encourage staff acceptance of both the new system and its development concepts.

In early 2018, the Secretary-General set up a task force on Zero Tolerance for Sexual Harassment. A staff-wide survey on sexual harassment was launched in April 2018 with a clear message that a zero-tolerance policy will be upheld on sexual harassment across ITU. The survey gave ITU specifics, such as applicable policies and how to report sexual harassment and to whom. It also provided training on issues such as the types of sexual harassment that could occur, gender stereotypes, and the importance of a discriminatory-free work environment. The survey replies were analysed and discussed by the task force in a retreat in May/June 2018, with the overarching objective of kickstarting a change in workplace culture regarding sexual harassment. An action plan was developed, which outlines immediate, short-term, and long-term actions and ensures, through enhanced support services, that frontline resources are available.

The plan also touches upon updates to the regulatory framework, capacity-building programmes and internal and external communications. The action plan was endorsed by CoCo. In parallel, ITU participated in the United Nations System Chief Executives Board for Coordination (CEB) Task Force on Addressing Sexual Harassment within the UN System.

In the area of social benefits, the medical insurance scheme (CMIP) administered by Cigna was also reviewed, including its premium structure, deductibles scheme, and description of benefits. Demographics and needs of the insured population were considered as was the system's short- and long-term financial sustainability.

## S.7 Financial resources management

The Financial Resources Management Department (FRMD) monitored the 2018 Union's budget implementation. This involved activities such as budget management and control, accounting, cost accounting, assets management, procurement, and travel management. FRMD managed the Union's accounts, produced statutory financial reports and other financial information and cooperated with oversight and financial control entities such as external and internal auditors, IMAC, and the JIU.

The financial activities of FRMD for the fiscal year ending 31 December 2017 were presented in Dubai to the final session of the Council 2018 (see document [C18/43](#)). For the eighth consecutive year, ITU received an unqualified audit opinion for its IPSAS-compliant financial operating report. The ASHI obligation as well as the health insurance scheme were closely monitored and a full actuarial study on these two topics was produced at the end of 2017 (see document [C18/46](#)). The financial activities of FRMD for the fiscal year ending 31 December 2018 were completed by the end of the first quarter of 2019 and the audited financial operating report will be presented to Council 2019 (see document [C19/42](#)).

Pursuant to the adoption of Res. 152 (Rev. Dubai, 2018), FRMD devoted significant efforts to the area of debt reduction. This has had a positive impact on the payment of contributions, as the collection rate for 2017 was more than 96 per cent, but also on the level of debts of the Sector Members and Associates (see document [C18/INF/8](#)).

PP-18 adopted Decision 5 (Rev. Dubai, 2018) which contains in its Annex 1 the Financial Plan for 2020-2023 amounting to CHF 660.3 million. The draft budget for 2020-2021 was presented to the CWG-FHR at its 9th meeting held from 29 to 30 January 2019. It amounts to CHF 331 million and is a balanced budget without any withdrawal from the Reserve Account. It was submitted to Council 2019 in document [C19/10](#).

Regarding travel management, all efforts have been made to reduce the level of the travel costs for official missions and to enhance, while streamlining, the related administrative and operational processes.

A new procurement manual was drafted in 2018, which will be adopted in 2019. Further, new procurement procedures have been adopted with the objectives of increasing internal control, avoiding conflict of interest, increasing vendor due diligence, and bettering the overall effectiveness of the procurement process.

ITU continued to publish flagship and various other publications in both print and digital/electronic versions. Many publications have been added to the free online access offer to disseminate information and reach out to a wider general public. These include major publications such as the Radio Regulations, Rules of Procedure, Recommendations, Basic Texts of the Union, WCIT Final Acts, Council Resolutions and Decisions, and ITU Handbooks, resulting in only Maritime Service Publications and a few other titles still for sale.

### S.7.1 Maintenance and upgrading of ITU buildings

In the period between Council 2018 and Council 2019, in accordance with PP Res. 194 (Busan, 2014), replaced by PP Res. 212 (Dubai, 2018), Deputy Secretary General's Office (DSGO) continued to manage the Headquarters Premises Project (HQP). The Facilities Management Division (FMD), in light of HQP developments, carried on upgrading and maintaining all existing ITU headquarter buildings. Both units have worked towards the goal of business continuity and will continue to do so during the future period of HQP construction works. The commissioned architect for HQP delivered a first concept design: this required optimization to keep within the available budget. Generous donations were received from Czech Republic and Ghana, and sponsorship agreements were signed with Saudi Arabia and UAE. A second iteration of the concept design is to be delivered in April 2019, as a technical basis for the "second message" to the Host Country, requesting the construction loan as agreed by PP Res. 212. FMD continues to act as secretariat to the Member States Advisory Group on HQP (MSAG), which has full access to all design materials and is reporting separately to Council 2019 ([C19/48](#)).

## S.8 Legal services

The Legal Affairs Unit (JUR) provided general legal support to the three Bureaux as well as the General Secretariat. JUR gave legal advice to PP-18, as well as the Council and Council Working Groups. During PP-18, JUR acted as the secretariat of the Policy and Legal Matters Committee and the Credentials Committee. JUR also actively participated in the resolution of sensitive political issues, prior to and during PP-18, and in the arbitration procedure won by ITU. It drafted and negotiated agreements for the hosting of conferences and other important meetings of the Union as well as for ITU's Regional and Area Offices. It continued to represent ITU before the ILO administrative tribunal and to act as the secretariat of the TSB Director's Ad Hoc Group on Intellectual Property Rights. JUR remains involved in the new building project.

## S.9 Internal audit

Internal Audit continued to carry out and follow up on recommendations made in previous years. Several assurance engagement audits were conducted in 2018 and will continue through 2019. The Secretary-General transmits an annual report on internal audit activities to the Council for its consideration. These reports may be found in documents C18/44, as well as in the upcoming C19 series of documents. In addition, in 2018, at the request of the Secretary-General, Internal Audit investigated allegations of fraud in a Regional office, findings of which were shared with the Secretary-General, the members of CoCo, the External Auditor, and IMAC. The relevant ITU officials were also informed of the remedial actions to be undertaken.

## S.10 Engagement with the membership and external stakeholders (including UN)

ITU continued to follow, participate in and provide inputs to the global follow-up and review process of Agenda 2030 and the Sustainable Development Goals (SDGs), which is carried out annually at the HLPF. This included ITU Council input and engagements with UN System entities and other stakeholders for side events to promote ICTs for the SDGs. ITU also enhanced its outreach with countries presenting their voluntary national review reports. The reports showcased the critical role of ICTs as an enabling tool for achieving and accelerating progress for sustainable development.

Details can be found in section I.4.1.

## S.11 Communication services (audio/visual services, press release services, social media, management of the web, branding, speechwriting)

To maintain the Union's relevance as per ITU Strategic Plan 2020-2023, Communication services developed a digital communication strategy focused on: daily listening to social and news media and ICD-related trends; influencer mapping and relations; content marketing; branding, including internal communications; and maintenance of content hub for credible and trusted, timely, accessible, actionable, relevant, and understandable audio, visual, and text content. Creating one new post dedicated to internal communications is in the pipeline. In December 2018, an ITU-wide Web Project Group for the bottom-up development of a completely new mobile-first ITU website was established and convened, in cooperation with Information Services (IS). A focal point system was also introduced (Corporate Communication focal point pairing with Sector communication focal point) to support greater strategic communication.

## S.12 Protocol services

During the period from September 2018 to March 2019, the Protocol Service was responsible for protocol services in all major ITU events, including ITU Telecom World 2018, PP-18 and CPM19. Protocol received Heads of State, Ministers, and VIP guests at ITU events around the world as well as at Headquarters. In January 2019, Heads of Permanent Missions in Geneva were invited to join the

Inauguration Ceremony at ITU Headquarters introducing the newly Elected Officials of ITU. Some 360 invitations for the Secretary-General to speak and/or participate in events around the world were also handled by the Service.

#### S.13 Facilitation of the work of governing bodies (PP, Council, Council working groups)

The Governing Bodies Secretariat (GBS) led, managed, and supervised the substantive preparation and organization of the Council and PP meetings in October and November 2018, the Council Working Group (CWG) meetings in January and February 2019 and the current Council session. It directed, coordinated and oversaw the preparation of the reports to the Council and PP and continued to monitor the implementation of all PP and Council decisions. It also provided expert advice and support to the Council and PP Chairs, as well as Chairs and Secretaries of CWGs and PP committees.

#### S.14 Badging production and distribution

The badging system is currently being integrated with CRM and the identity management system. CRM is the platform that contains all the contact and account information of people, companies and organizations interacting with ITU. The same CRM platform is intended to be used to invite and register people to ITU meetings and conferences. This set up was used for Council 2018, ITU Telecom World in 2018 and PP-18

#### S.15 Resource-mobilization services

By the end of 2018, ITU's total industry and academia membership reached almost 1,200 memberships and over 800 entities. These are the highest membership levels on record. ITU, in 2018, attracted more than 100 new memberships and the trend continues. As of the end of February 2019, ITU expects to have 900 member entities and to surpass 1,200 memberships. Despite this growth and diversification in membership, revenues remained relatively stable as new industry players chose, for the most part, to become associates rather than Sector Members. The lower fee category of Academia also contributed to recent growth. From a sectoral perspective, most of the net growth over the period has come from ITU-T Associates and Academia, attracted by new topics in study groups, while membership in ITU-R has remained stable with ITU-D experiencing a decline. Member retention improved over the period, with the percentage rate of annual member loss or "churn" falling from about 8 per cent in 2016 to around 4 per cent in 2018. Furthermore, ITU gained twice as many new members as it lost in 2018.

This trend of higher membership numbers but stable to modest growth in revenues is expected to continue in the coming years as most new members continue to come from outside of ITU's traditional telecom and satellite markets. The decision of PP-18 to introduce reduced fees for SME Associates (following a successful pilot project launched by Council 2017 to test SME participation) will further contribute to this trend. Beyond the issue of revenues, it is important to note that an increasingly diversified membership will help ITU better reflect and adapt to changes in the marketplace, ensuring greater relevancy of the Union's study groups and their outputs, including recommendations and best practices. It is also hoped that reduced fees for SMEs will help increase industry participation from developing countries.

At its 2017 session, ITU Council tightened the criteria for exemption from fees for international and regional organizations (C17/50, Annex 2). These revised criteria were applied to applications received in 2018 and onwards.

Regarding cross-ITU resource mobilization, Council 2017 approved principles (C17/67) to guide the Secretariat, which were reflected in a revised Service Order in 2018 for event-related sponsorships. The Service Order is designed to protect ITU's reputation, independence, and neutrality, as well as strengthen accountability and transparency of sponsorship campaigns, ensuring fairness and equal treatment of sponsors. Among other steps, ITU is now systematically conducting due diligence on

non-members for sponsorships above CHF 5 000, using databases collectively used by other UN bodies. An internal group in the secretariat was established to better coordinate cross-ITU outreach and to report results to management.

#### S.16 Corporate strategic management and planning

A report on the implementation of the ITU Strategic Plan 2016-2019 was presented to and endorsed by PP-18 (PP-18/20) in October 2018. PP-18 also adopted the new Strategic Plan for the Union for 2020-2023, as well as the Resolution 200 (Rev. Dubai, 2018) reinforcing the Connect 2020 Agenda, which is now called Connect 2030 Agenda.

Regarding intersectoral coordination on corporate management issues, systematic risk management, including the development and maintenance of risk registers, has been carried out.

To supporting the implementation of the 2030 Agenda for Sustainable Development and Connect 2020 Agenda, an enhanced version of the [ITU SDG Mapping Tool](#) was developed to provide a comprehensive visual overview of ITU contributions to the SDGs.

## 8 Activities of ITU governing bodies

### 8.1 ITU Council

The last meeting of the 2018 session of the Council was held on 27 October in Dubai. The [extraordinary session of Council 2019](#) was held on the last day of PP-18, 16 November. At this session, Dr E. Azzouz (Egypt) was elected as C19 Chair and Mr S. Bin Ghelaita (United Arab Emirates) as Vice-Chair. Regarding the SC-ADM, Ms S. Erebor (Nigeria) was elected Chair and Mr D.O. von der Emden (Switzerland) continued to serve as Vice-Chair. The second vice-chair post will be occupied by a member from Region E.

Proposed dates for the 2020, 2021, and 2022 Council sessions can be found in document [C19/2](#).

### 8.2 Council Working Groups and Expert Groups

One cluster of CWGs was held in the reporting period of January to February 2019. These groups reviewed tasks mandated to them by the Council; the discussions and summaries can be found in the Chairs' reports as follows: CWG-WSIS&SDG, [C19/8](#); CWG-Internet, [C19/51](#); CWG-Languages, [C19/12](#); CWG-FHR, [C19/50](#). Full information on all CWGs can be found here: <http://www.itu.int/en/council/Pages/groups.aspx>.

### 8.3 Plenipotentiary Conference

The 2018 ITU Plenipotentiary Conference (PP-18) took place in Dubai, United Arab Emirates, from 29 October to 16 November 2018.

PP-18 adopted ten new Resolutions; revised two Decisions and 51 Resolutions; and suppressed one Decision and ten Resolutions. It also elected a new management team, RRB members for a new term, and the 48 Member States of the ITU Council:

Region A (Americas, nine seats): Argentina, Brazil, Bahamas, Canada, Cuba, El Salvador, Mexico, Paraguay, United States.

Region B (Western Europe, eight seats): France, Germany, Greece, Hungary, Italy, Spain, Switzerland, Turkey.

Region C (Eastern Europe and Northern Asia, five seats): Azerbaijan, Czech Republic, Poland, Romania, Russian Federation.

Region D (Africa, 13 seats): Algeria, Burkina Faso, Côte d'Ivoire, Egypt, Ghana, Kenya, Morocco, Nigeria, Rwanda, Senegal, South Africa, Tunisia, Uganda.

Region E (Asia and Australasia, 13 seats): Australia, Bangladesh, China, India, Indonesia, Japan, Korea (Republic of), Kuwait, Pakistan, Philippines, Saudi Arabia, Thailand, United Arab Emirates.

See <https://www.itu.int/web/pp-18/en/> and document C19/4 for more details.



## Annex 1: Implementation of ITU Decisions, Resolutions, and Recommendations

### **Resolution 21 (Rev. Dubai, 2018) – Measures concerning alternative calling procedures on international telecommunication networks**

Establishment of a new work item on a draft new ITU-T recommendation on Alternative Calling Procedures is planned to be agreed at the ITU-T SG2 meeting from 4 to 13 December 2019.

Recommendation ITU-T E.157 “Calling Party Number Delivery” is under revision in ITU-T SG2. Establishment of a new work item on Spoofing was agreed at the ITU-T SG2 meeting of 19 to 28 February 2019.

Uganda Communications Commission published an announcement in the ITU Operational Bulletin No 1153 of 1. VIII.2018, that “Uganda Communications Commission (UCC) has directed all operators in Uganda to establish call line identification (CLI) facilitates in line with the provisions of the ITU-T E.157 and ITU-T E.164 Recommendations. Effective 1st August 2018, the operators have been required to prevent any call with invalid or non-dialable CLI data from being connected to the called party in Uganda. This is to apply to both local and international calls.”

### **Resolution 30 (Rev. Dubai, 2018) – Special measures for the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition**

Assistance to the least developed countries, small island developing states, landlocked developing countries, and countries with economies in transition is ongoing through operational plan activities, projects, and ad hoc assistance. The work is guided by the ITU Strategic Plan and ITU-D Action Plan adopted at WTDC-17.

### **Resolution 34 (Rev. Dubai, 2018) – Assistance and support to countries in special need for rebuilding their telecommunication sector**

Support to countries during natural disasters and emerging out of major disasters is ongoing and has been under implementation in support of affected countries.

### **Resolution 66 (Rev. Dubai, 2018) – Documents and publications of the Union**

All dispositions of this resolution are implemented. There has been no change or development on the issue of cost recovery and its basic principles. The provisions and principles laid down in Resolution 66 are still valid and pertinent.

### **Resolution 91 (Rev. Guadalajara, 2010) – Cost recovery for some ITU products and services**

The resolution serves as basis for all cost recovery activities undertaken by ITU. Cost recovery for products and services such as UIFN, SNF are governed by the principles laid down in the resolution.

All dispositions of this resolution are implemented. There has been no change or development on the issue of cost recovery and its basic principles. The provisions and principles laid down in Resolution 91 are still valid and pertinent.

### **Resolution 99 (Rev. Dubai, 2018) – Status of Palestine in ITU**

Resolution 99 (Rev. Dubai, 2019) was fully implemented and allowed the observer from the State of Palestine to participate in all conferences, assemblies, and meetings organized under the aegis of ITU, in particular PP-18, taking advantage of all of the rights enumerated in Resolution 99 (Rev. Dubai, 2018). During PP-18, Resolution 99 was slightly amended by consensus. The observer from the State of Palestine attended the session of the Council.

### **Resolution 101 (Rev. Dubai, 2018) – Internet Protocol-based networks**

See section I.2-1.

### **Resolution 119 (Rev. Antalya, 2006) – Methods to improve the efficiency and effectiveness of the RRB**

The Board pursued its periodical review of the working methods and internal processes contained in Part C of the Rules of Procedure. The 77th, 78th, and 79th RRB meetings were scheduled in 2018. The Summary of Decisions and the Minutes of each Board's meeting have been duly published on the [RRB website](#) within statutory time limits.

### **Resolution 125 (Rev. Dubai, 2018) – Assistance and support to Palestine for rebuilding its telecommunication networks**

Assistance has been provided on:

- establishment and training for Pal CIRT members in collaboration with ITU Arab Regional Cyber security Centre (ARCC) (Oman).
- developing Bottom-Up (BU-LRIC) costing model of fixed/mobile network as well as establishing a national electronic authentication unit.
- the connectivity of schools. This has resulted in more than 2000 schoolchildren with access to ICT facilities and 20 teachers trained to use and teach by ICT-enabled methods.
- capacity building through fellowships to facilitate participation of Palestinian delegates to seminars and workshops, including the Palestinian participation in RDF, TDAG, ITU SGs, and GSR events as well as TELECOM.

### **Resolution 131 (Rev. Dubai, 2018) – Measuring information and communication technologies to build an integrating and inclusive information society**

Implementation of this resolution is ongoing. Capacity-building workshops were held, in support of Member States, in data collection and submission of quality data. An assessment has been carried out on the human and financial resources required to enhance the work on statistics and indicators and will be reported to the Council.

BDT continued to track regulatory and market trends in the ICT sector with the ITU Regulatory and the ITU Tariff Policies surveys, the results of which are annually updated in the ITU ICTEye platform and the ICT Regulatory Tracker. The 2018 Global ICT Regulatory Outlook Report was launched in the fourth quarter of 2018 as a second report in the annual series tracking market and regulatory trends in the ICT sector and their implications. The 2017 regulatory and policy data were published on the ICT Regulatory Tracker and made available on the ITU website.

### **Resolution 135 (Rev. Dubai, 2018) – ITU's role in the durable and sustainable development of telecommunications/information and communication technologies, in providing technical assistance and advice to developing countries and in implementing relevant national, regional and interregional projects**

Regional initiatives are intended to address specific telecommunication/ICT priority areas, through partnerships and resource mobilization, to implement projects. Under each regional initiative, projects are developed and implemented to meet the region's needs. The products and services developed through regional initiatives, in order to achieve related objectives and outcomes under the ITU-D contribution to the ITU strategic plan, will be identified in relevant project documents. For the funding of projects to implement the WTDC-17 Regional Initiatives, ITU Council-18 decided to allocate CHF 2 million for the period of 2018-2019 from the 2017 Operational Plan and include CHF 3 million for 2020-2021 in the Financial Plan 2020-2023. These funds were allocated to act as seed funds and used to attract funds from partners. As an initial step towards the implementation of the regional

initiatives, ten new projects from all regions were under development by the end of 2018 for implementation beginning in 2019.

### **Resolution 139 (Rev. Dubai, 2018) – Use of telecommunications/information and communication technologies to bridge the digital divide and build an inclusive information society**

ITU provides high-quality data, research, analyses, and tools (GSR discussion papers, publications, databases) to support membership in implementing and reviewing strategies, policies, and legal and regulatory frameworks as well as in moving towards evidence-based decision-making to allow for the Use of telecommunications/information and communication technologies to bridge digital the digital divide and build an inclusive information society. Publications included an ITU Report on Setting the stage for 5G: Opportunities and challenges, a Report on the economic contribution of broadband, digitization and ICT regulation, and a Report on Regulatory challenges and opportunities in the new ICT ecosystem, among others.

The Regional Economic Dialogues (REDs) are high level forums dedicated to the discussion of economic regulation and finance. In 2018, two REDs were organized, the first in Africa (Burkina Faso, 8-12 October) and second in the Americas (Mexico, 4-6 September), to examine the economic implications of future technologies (Internet of Things (IoT) and Machine-2-Machine (M2M), Cloud Computing, Big Data and Block chain) and their application in the each region. These Dialogues also examined existing and emerging opportunities and challenges and explored opportunities for creating an enabling environment for ICT competitiveness and growth in the regions.

### **Resolution 151 (Rev. Dubai, 2018) – Implementation of results-based management in ITU**

All dispositions of this resolution are implemented. The 2020-2021 draft budget that will be presented to Council 2019 follows the RBB principles. The provisions and principles laid down in Resolution 91 are still valid and pertinent.

### **Resolution 154 (Rev. Dubai, 2018) – Use of the six official languages of the Union on an equal footing**

Since PP-18, CWG-LANG has resumed its work of monitoring progress based on detailed reports by the secretariat on the implementation of the languages policy. In accordance with Resolution 1372, it has operated mainly by correspondence and through informal consultations with “all Member States of the Union, in particular those representative of and reflecting one or more of the six official languages of the Union”. On Monday, 28 January 2019, CWG-LANG held a formal meeting, open to all Member States, to discuss the report by the Secretary-General pursuant to Resolution 154 (Rev. Dubai, 2018) and Council Resolution 1372 (Doc. CWG-LANG/9/2). The outcome of this meeting is reflected in the Report by the ninth meeting of the Council Working Group on Languages, submitted by its Chair to C19 (Doc. CWG-LANG/9/5).

### **Resolution 157 (Rev. Dubai, 2018) – Strengthening the project execution and project monitoring functions in ITU**

ITU projects are making a difference in the lives of people and offer sustainable and innovative solutions around the world to achieve development through ICTs. ITU offers tailor-made projects for multistakeholder needs, with recognized long-standing technical expertise in the ICT field and comprehensive project management experience.

BDT has continued to improve and take the necessary steps to strengthen its project execution role, by developing and refining the necessary tools, methodologies, guidelines, templates, standards, database and training related to projects and project management.

The ongoing application of a results-based management approach, as well as project management guidelines, has also resulted in improved management, better implementation, enhanced auditing and monitoring, better accountability and the achievement of planned results and project objectives.

BDT has made continuous efforts to increase the sharing of information, experiences, and lessons learned from implemented projects, especially by enhancing the ITU projects website, as well as developing case studies and project post implementation assessment reports and videos.

#### **Resolution 160 (Rev. Dubai, 2018) – Assistance to Somalia**

ITU has been working very closely with the administration of Somalia along with other partners, such as the World Bank, in order to meet country needs.

Assistance was provided to formulate a national policy on ICTs. Specific training on spectrum management has been conducted using the SMS4DC software. This is the first training to be carried in Mogadishu in the past ten years.

Capacity building is a cornerstone of ITU's assistance to Somalia. These have included assistance on IPv6.

As part of a partnership between ITU, the World Bank, and USTTI, a specialized training had been carried out for the Regulatory Authorities of Somalia, Ethiopia, and South Sudan. This is a very good example of close collaboration between partners and Member States. A list of priority areas had been agreed, with Somalia, to carry out additional assistance over the coming years.

#### **Resolution 161 (Antalya, 2006) – Assistance and support for the Democratic Republic of Congo for rebuilding its telecommunication network**

Under ITU and the Ministry of Science, ICT and Future Planning (MSIP), Republic of Korea, wireless broadband access master plan project, the groundwork has been completed to adopt and use broadband in several countries, including the Republic of the Congo.

#### **Resolution 162 (Rev. Busan, 2014) – Independent Management Advisory Committee**

IMAC submitted its Seventh Annual Report (Doc. C18/22) to the Council in April 2018, and a Supplementary Report (Doc. C18/22 Add.1) to the final session of Council in October 2018 in Dubai. IMAC's Eighth Annual Report to Council is available in Doc. C19/22. All IMAC meeting reports and related documents are available at the IMAC public website: [www.itu.int/imac](http://www.itu.int/imac).

Since the beginning of 2019, the selection process for the new IMAC Members (see CWG-FHR 9/6) was initiated and will conclude with the appointment of new members by the 2019 Session of Council.

#### **Resolution 165 (Rev. Dubai, 2018) – Deadlines for the submission of proposals and procedure for the registration of participants to conferences and assemblies of the Union**

The revision of this resolution will be put into practice during the next WRC-19 meeting, where the deadline of submission for contributions is set for 30 September 2019. This will not only ensure the timely translation of all contributions submitted but will also significantly reduce overtime worked during the conference. This will have positive implications on the conference's budget as well as C&P's budget.

#### **Resolution 167 (Rev. Dubai, 2018) – Strengthening and developing ITU capabilities for electronic meetings and means to advance the work of the Union**

The multilingual interactive remote participation (MIRP) platform adopted by ITU has been in operation for over eight years. Following the recent availability of alternate MIRP platforms, the secretariat selected a service provider, at the end of 2018, to implement a new MIRP solution, with the aim of improving service quality and reducing operational cost. The new platform should be ready for testing around mid-2019.

### **Resolution 173 (Guadalajara, 2010) – Piracy and attacks against fixed and cellular telephone networks in Lebanon**

ITU is waiting for reports from Lebanon indicating that further attacks affected its networks.

### **Resolution 175 (Rev. Dubai, 2018) – Telecommunication/information and communication technology accessibility for persons with disabilities and persons with specific needs**

See section I-5.1 and [www.itu.int/accessibility](http://www.itu.int/accessibility).

### **Resolution 176 (Rev. Dubai, 2018) – Measurement and assessment concerns related to human exposure to electromagnetic fields**

This resolution instructs the Directors of the three Bureaux to collect and disseminate information concerning exposure to EMF, including EMF measurement methodologies, to assist national Administrations, particularly in developing countries, to develop appropriate national regulations.

Ongoing development work on exposure to electromagnetic fields has been conducted through projects and in ITU-D Study Group Question 7/2. Q7/2 started its work for the new study cycle to prepare a Report on international EMF activities and exposure limits, collect case studies, and analyse the regulatory policies concerning human exposure to electromagnetic fields being considered or implemented for authorizing the installation of base stations. The report will propose guidelines and best practices on this matter and provide information on the international (mainly in WHO, ICNIRP and IEEE) activities, including updated limits of exposure levels. During the Rapporteur meeting an international workshop was held in Geneva on 10 October 2018 on “Modern policies, guidelines, regulations and assessments of human exposure to RF-EMF”.

ITU-T Study Group 5 on “Environment, climate change and circular economy” is the lead ITU-T Study Group on studies on electromagnetic compatibility, lightning protection and electromagnetic effects. ITU-T SG5 within Working Party 1 on “EMC, lightning protection, EMF” has revised Recommendation: ITU-T K.90 “Evaluation techniques and working procedures for compliance with exposure limits of network operator personnel to power-frequency electromagnetic fields”. ITU-T SG5 has also developed three Supplements: ITU-T K.Suppl.13, “Radiofrequency electromagnetic field (RF-EMF) exposure levels from mobile and portable devices during different conditions of use”. ITU-T K.Suppl.14, “The impact of RF-EMF exposure limits stricter than the ICNIRP or IEEE guidelines on 4G and 5G mobile network deployment” and ITU-T K.Suppl.16, “Electromagnetic field compliance assessments for 5G wireless networks”. ITU T SG5 also revised Supplement ITU-T K.Suppl.4 to ITU-T K.91, “Electromagnetic field considerations in smart sustainable cities” to take into account 5G mobile technology.

ITU-T SG5 updated software EMF-estimator (Appendix I to Recommendation ITU-T K.70) and software K.52 calculator (Appendix V to Recommendation ITU-T K.52) and developed two new Appendixes VII and IX to Recommendation ITU-T K.91 and new Appendix II to Recommendation ITU-T K.121.

During 2018, ITU-T organized the following events in Zanzibar, Tanzania: the 12th ITU Symposium on ICT, Environment and Climate Change with a dedicated session on human exposure to EMF on 9 April 2018, and a Forum & Training on With ICTs everywhere – How safe is EMF?, on 10 April 2018. The BR also shared information during this Symposium on ITU-R related activities.

ITU-T SG5 Working Party 1 Chair actively participated in the “International Workshop on Radiofrequency Electromagnetic Fields Measurements, Research Studies and Standards Development, held from 1 to 2 October 2018 in Lima, Peru.

In addition to the ITU-R Handbook on Spectrum Monitoring, which contains information on methods and use of equipment for measuring exposure to non-ionizing radiation in the frequency bands 9 kHz to 6 GHz and above 6 GHz, the ITU-R Working Party 1C (Spectrum Monitoring) of ITU-R Study Group 1 (Spectrum Management) is developing a new ITU-R Report on EMF measurements to assess human exposure in response to Question ITU-R 239-1. The preliminary information available explains the ICNIRP reference levels, as well as the measurement process and instruments to be used to assess exposure due to specific radiocommunication services or applications.

In response to the ICNIRP Public Consultation on the Draft ICNIRP Guidelines on Limiting EMF Exposure (100 kHz to 300 GHz), ITU comments have been prepared by ITU-T Study Group 5 in cooperation with experts from ITU-D SG2 Q7/2 and ITU-R Working Party 1C on EMF measurements. ITU-R Working Party 1C will provide additional comments, as appropriate, after its next meeting in June 2019.

ITU is regularly represented in WHO meetings relating to EMF. Similarly, WHO representatives regularly participate in meetings and workshops dealing with EMF, which are organized by ITU.

**Resolution 177 (Rev. Dubai, 2018) – Conformance and interoperability; also WTSA Res. 76 and WTDC Res. 47**

ITU made progress implementing the ITU Conformance and Interoperability Programme (C&I) including:

- The ITU Product Conformity Database, which publicizes the conformance of ICT products and services with ITU-T's international standards, was launched in December 2014. Currently, the database contains more than 500 entries on five categories such as E-health devices, mobile phones, IPTV, Ethernet services, and Mobile Number Portability (MNP) products.
- The full list of ITU-T Recommendations suitable for C&I testing is updated on the regular basis following the inputs provided by ITU-T SGs. The latest updated list is available in the [reference table](#).
- Pilot projects for conformity to ITU-T Recommendations are carried out by ITU-T Study Groups.
- ITU-T CASC (Conformity Assessment Steering Committee) elaborates the procedures of Testing Laboratories (TLs) which have competence for testing against ITU-T Recommendations. Two new ITU-T Guidelines "Testing Laboratories Recognition Procedure" and "ITU-T CASC procedure to appoint ITU-T technical experts" were approved in 2015 and 2017 respectively. Currently, ITU-T CASC is developing the third Guideline "ITU-T CASC collaboration procedure with IECEE for TL recognition service on ITU-T Recommendations". This document should be finalized and proposed to ITU-T SG11 for agreement in October 2019.
- ITU-T CASC started the process on appointing ITU-T Technical experts following procedures defined in the Guideline highlighted above. The applications received from candidates will be analysed and assessed by appointment teams and the final decisions will be announced at the next ITU-T CASC meeting.
- ITU-T CASC continues collaboration with existing Conformity Assessment systems and schemes such as IEC and ILAC. The Certification Management Committee (CMC) of IEC set up an IECEE Task Force "ITU requirements" which finalized draft Operational Document (OD) "ICT Laboratory Recognition Service on ITU-T Recommendations," which will become a dedicated testing laboratory recognition procedure. It will be established by IECEE after approval by IECEE CMC in June 2019. Afterwards, all testing laboratories may apply for such recognition. The TL should follow the instructions given in IECEE OD.
- ITU-T CASC, in collaboration with IECEE is developing a joint ITU/IEC certification scheme. ITU-T CASC established a list of ITU-T Recommendations which may become subject of joint ITU/IEC certification schemes, according to the inputs received from ITU-T SGs and ITU members. Among them are Recommendations ITU-T P.1140, ITU-T P.1100, ITU-T P.1110 and ITU-T K.116. All ITU-T SGs are encouraged to provide updates to this list.

### **Resolution 179 (Rev. Dubai, 2018) – ITU's role in child online protection**

The informal group met several times and discussed the proposed regional changes paragraph by paragraph. The group was chaired by Moldova and added important references to children with disabilities, awareness raising and capacity-building activities and establishment of national frameworks for actions. The role of BDT was further reinforced. In particular, the Resolution is asking the BDT Director to: 1) update the guidelines by ITU to consider technological advancement, including the ones for children with disabilities and children with specific needs; 2) disseminate frameworks for data production and statistics on child online protection; 3) assist Member States, in particular developing countries, to develop national COP strategies with stakeholders; and 4) continue promoting training programmes for stakeholders.

### **Resolution 182 (Rev. Busan, 2014) – The role of telecommunications/information and communication technologies in regard to climate change and the protection of the environment**

ITU-T SG5 on “Environment, climate change and circular economy” is the lead Study Group on ICTs related to the environment, climate change, energy efficiency, clean energy, and circular economy, including e-waste.<sup>86</sup>

ITU-T SG5 developed Recommendation ITU-T L.1450 on “Methodologies for the assessment of the environmental impact of the information and communication technology sector”. ITU-T SG5 is working together with GeSi, SBTi and IEA on draft Recommendation “GHG emissions trajectories for the ICT sector compatible with the UNFCCC Paris Agreement”.

ITU has also continued to contribute to the work of the UN system in the domain of environmental protection, by participating regularly in the major UN processes and conferences on this topic, such as the UN Framework Convention on Climate Change (UNFCCC).

ITU-D is also in the process of implementing this resolution and has done extensive work on environmental protection, through e-waste management in cooperation with partners.

### **Resolution 184 (Guadalajara, 2010) – Facilitating digital inclusion initiatives for indigenous peoples**

The ITU online indigenous training course on Communication Innovative Tools for the Strengthening of Indigenous Communities of the Americas Region has received over 600 registrations. Classes are planned in 2019. ITU-D has also developed instructional material for a Training Programme for Indigenous Technicians on Community Networks. This training will be partially delivered online and is expected to have a two-week, hands-on, on-site training. Training delivery shall start in the second quarter of 2019.

### **Resolution 186 (Rev. Dubai, 2018) – Strengthening the role of ITU with regard to transparency and confidence-building measures in outer space activities**

A project is running in ASP Region on the Development of Satellite Communications Capacity and Emergency Communications Solutions for the Pacific Islands. This project aims to develop low cost, reliable, diverse satellite communications capacity, for the socio-economic development of the Pacific Islands region, utilizing un-used satellite capacity.

### **Resolution 188 (Rev. Dubai, 2018) – Combating counterfeit telecommunication/information and communication technology devices<sup>87</sup>**

Following the results of the Workshop in July 2018, ITU-T SG11 requested the TSB Director to inform the Council on the following:

<sup>86</sup> WTSR Resolutions 2, 72, 73, 79; WSIS Action Line C7; SDG target 12.4

<sup>87</sup> WTSR Resolution 96



“Following summary records of ITU Council-17 (C17/124, clauses 3.5-3.10) and ITU-T Council-18 (C18/107, clause 2) on tampering and duplication of IMEI identifiers used in mobile devices, ITU-T SG11, through the TSB Director, would like to inform ITU Council about outcomes of discussion that took place at the ITU Workshop on Global approaches on combating counterfeiting<sup>88</sup> and stolen ICT devices<sup>89</sup> on this matter. The Workshop was held in Geneva on 23 July 2018 during ITU-T SG11 meeting (18-27 July 2018).

During that Workshop, it was noted that the reliability of ICT identifiers is still an important issue for most countries. The key issues highlighted by the speakers are available in [SG11-TD560/GEN](#).

According to outcomes of the wrap-up session, Workshop participants agreed with key actions that aim to increase reliability of existing ICT identifiers.

ITU-T SG11 is encouraged to:

- study approaches on how to defend existing ICT identifiers against tampering/cloning;
- draw up a list of unique ICT identifiers to be used for combating counterfeit and mobile device theft;
- develop methods of assessing and verifying identifiers used for purposes of combating counterfeit and stolen devices;
- consider Blockchain-based technologies to address the tampering/cloning of existing ICT identifiers, combat counterfeiting and stolen ICT devices;
- develop mechanisms as appropriate for identifying counterfeit production.

The presentations, video of the demo zones, interviews, newslog, photos, and full list of actions agreed at the Workshop including the overview of the current situation are available in the outcomes posted on the Workshop’s [webpage](#).

Finally, ITU-T SG11 would like to encourage all interested stakeholders (government, operators, device manufacturers, distributors, retailers) to join ITU-T SG11 for discussions on the approach to address cloning and tampering of existing identifiers, combat counterfeiting and stolen ICT devices.”

Also, following the decision of Council-18 (C18/107, clause 2) and the technical report prepared by TSB ([SG11-TD730-R1/GEN](#)), ITU-T SG11 decided to start a Technical report “Reliability of IMEI identifier” ([SG11-TD850/GEN](#)), which contains a study about key vulnerabilities on IMEI reprogramming on mobile devices and proposals to improve IMEI reliability. GSMA as well as ITU-T and ITU-D SGs have been informed about this activity.

In addition, ITU-T SG11 started a new work item: Technical Report TR-CF-QoS “Impact of Counterfeit Mobile devices on Quality of Service”, that aims to study the negative effects and impact of counterfeit mobile devices on network’s quality of service along with the negative effects and service degradation experienced by the mobile subscribers.

Finally, in March 2019, following Member States consultation, ITU-T SG11 approved Recommendation ITU-T Q.5050 “Framework for solution to combat counterfeit ICT devices”. It is the very first recommendation on this topic in ITU-T.

### **Resolution 190 (Busan, 2014) – Countering misappropriation and misuse of international telecommunication numbering resources**

Recommendation ITU-T E.156 “Guidelines for ITU-T action on reported misuse of E.164 number resources” is under revision. Numbering misuse cases were discussed at the last ITU-T SG2 meeting of 19 to 28 February 2019.

<sup>88</sup> WTSA Resolution 96

<sup>89</sup> WTSA Resolution 97



### **Resolution 193 (Busan, 2014) – Support and assistance for Iraq to rebuild its telecommunication sector**

At the request of Iraq, emphasis has been put on assisting with the newly adopted Resolution 211. Assistance for the actual rebuilding of infrastructure was not possible in past years due to the security situation on the ground.

### **Resolution 197 (Rev. Dubai, 2018) – Facilitating the Internet of Things and smart sustainable cities and communities**

ITU-T SG20 developed a series of Recommendations including: ITU-T Y.4202 “Framework of wireless power transmission application service”; ITU-T Y.4203 “Requirements of things description in the Internet of things”; ITU-T Y.4204 “Accessibility requirements for the Internet of things applications and services”;<sup>90</sup> ITU-T Y.4205 “Requirements and reference model of IoT-related crowdsourced systems”; and ITU-T Y.4555 “Service functionalities of self-quantification over Internet of things”.<sup>91</sup>

More information regarding the events organized can be found in I.4-1.

### **Resolution 198 (Rev. Dubai, 2018) – Empowerment of youth through telecommunication/information and communication technology**

See section I-4.1.

### **Resolution 200 (Rev. Dubai, 2018) – Connect 2030 Agenda for global telecommunication/information and communication technology, including broadband, for sustainable development**

The Connect 2020 agenda was set up by Resolution 200 (Busan, 2014). It has been revised by PP-18 and new targets have been included in the new Connect 2030 Agenda (Resolution 200 (Rev. Dubai, 2018)).

### **Resolution 204 (Dubai, 2018) – Use of information and communication technologies to bridge the financial inclusion gap**

ITU-T Study Group 3 agreed on a very important Technical Report containing the glossary for digital financial services, laying the foundation for harmonious outputs on the topic. The group also achieved an important first stage agreement on a new standard ITU-T D.263 (D.MFS), “Costs, Charges and Competition for Mobile Financial Services (MFS)”. The Draft Recommendation ITU-T D.263 proposes a possible approach to reduce high retail and wholesale telecommunication charges related to mobile financial service (MFS). This document has been circulated to Member States for consultation.

ITU is carrying out country implementation of the Focus Group Digital Financial Services (FG DFS) Recommendations, Payment Aspects of Financial Inclusion (PAFI) recommendations and Level One Principles of Gates Foundation. Country implementation is currently taking place in Mexico, Egypt, and China.

### **Resolution 206 (Dubai, 2018) – OTTs**

ITU members in ITU-T Study Group 3 have achieved a first-stage approval (‘determination’) of a new ITU-T Recommendation addressing the relationship between network operators and providers of over-the-top (OTT) services. The draft new standard ITU-T D.262 (D.OTT) on Collaborative Framework for OTTs provides parameters for the analysis of the new financial dynamics of the ICT ecosystem. It also focuses on how policy and regulatory frameworks could support competition, consumer protection, consumer benefits, dynamic innovation, sustainable investment and infrastructure development, accessibility and affordability in relation to the global growth of OTTs. This document has been circulated to Member States for consultation. The group is also advancing work in this field, on topics including Impact of OTT bypass and Partnerships between OTT players and mobile network operators.

<sup>90</sup> PP Resolution 175; WTS Resolution 70; WSIS Action Line C7; SDG Target 10.6

<sup>91</sup> PP Resolutions 101, 102, 133, 180; WTS Resolutions 2, 98; WSIS Action Lines C2, C6, C7; SDG Targets 11.2, 11.3, 11.5, 11.b

### **Resolution 207 (Dubai, 2018) – ITU Journal: *ICT Discoveries*<sup>92</sup>**

ITU Members resolved to support the development of the ITU Journal and to publish original scientific research to generate forward-thinking discussions on emerging trends relevant to the work of ITU. Members further resolved to establish collaborative efforts with the research community and to raise awareness of the ITU Journal worldwide.

### **Resolution 211 (Dubai, 2018) – Support for the Iraqi Du3M 2025 initiative for advancement of the telecommunication and information technology sectors**

A scoping mission was made in Iraq as part of the preparatory activity to implement projects that are of interest and are part of the national strategy of Iraq. These initiatives include, cyber security and Persons with Disabilities. A draft implementation plan has already been agreed to with Iraq.

### **Resolution 213 (Dubai, 2018) – Measures to improve, promote and strengthen ITU fellowships<sup>93</sup>**

From September 2018 to March 2019, TSB provided 111 fellowships for the following meetings:

- In Geneva: ITU-T Study Groups 2, 5, 11, 12, 15, 16, 17, and TSAG.
- Outside Geneva: ITU-T SG2RG-AFR (Egypt) and ITU-T SG2RG-ARB (Egypt), ITU-T SG3RG-ARB (Kuwait), ITU-T SG3RG-AFR (Madagascar), ITU-T SG5RG-ARB (Kuwait), ITU-T SG9 (Colombia), ITU-T SG12RG-AFR (Rwanda), ITU-T SG13 (Zimbabwe), ITU-T SG17RG-ARB (Kuwait), ITU-T SG20 (China), and ITU-T SG20RG-EECAT (Belarus).

TSB received 165 fellowship requests. A total of 141 fellowships were awarded. Of that amount, 111 were used for a total of CHF 247,000.

### **Decision 5 (Rev. Dubai, 2018) – Revenue and expenses for the Union for the period 2020-2023**

The draft budget for 2020-2021 is based on Decision 5 (Rev. Dubai, 2018). Document [C19/45](#) sets forth information on implementing the efficiency measures laid down in Annex 2 to Decision 5.

<sup>92</sup> PP Resolution 207; WSIS Action Lines C4, C7; SDG Targets 4.4, 4.7, 4.a, 4.b

<sup>93</sup> PP Resolution 213; WTSR Resolution 44; SDG Target 10.6