



**Agenda item: PL 3.1**

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## Report by the Secretary-General

# Report on the Implementation of the Strategic Plan and Activities of the Union (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. Busan, 2014)). It focuses on the progress made towards achievement of the strategic goals and objectives of the Union from March 2016 to February 2017.

### Action required

The Council is invited to approve this document.

### References

CV 61 and 102  
Resolution 71 (Rev. Busan, 2014)

# Executive Summary

This Annual Progress Report is aligned with the new ITU Strategic Plan 2016-2019 approved at PP-14. Progress made towards the achievement of the strategic goals and objectives is measured and demonstrated in this report through the indicators that have been endorsed by membership in the operational plans of the three Sectors and the General Secretariat.

## ITU Radiocommunication Sector (ITU-R)

- Following the World Radiocommunication Conference 2015 (WRC-15), the updated version of the Radio Regulations (Edition of 2016) was published in December 2016 and made freely available to the public. The Conference approved various resolutions relating to the preparation of WRC-19 and WRC-23. The preparatory studies requested by these resolutions are being conducted within ITU-R, with the support of the regional groups and other international organizations.
- On 12 December 2016 in Geneva, the ITU celebrated the 110th anniversary of the Radio Regulations. This gave the opportunity to showcase 110 years of successful development and implementation of this major treaty, which enables the radiocommunication ecosystem to exist in a sustainable manner. Celebrations included two panel discussions about the ITU Radio Regulations' impact on the ICT industry, and the challenges, opportunities, and future of the ITU Radio Regulations. The event was attended by over 540 participants from 106 countries. Present and former officials of the Union, present and former members of the Radio Regulations Board (RRB), and ITU-R and former CCIR Study Group Chairmen were also present.
- 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 met three times and approved new or modified Rules of Procedures related to WRC-15 decisions. Significant progress was registered in the reduction of interference cases from Italy into television services of its neighbors.
- 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 including a World Radiocommunication Seminar (WRS-16), two Regional Radiocommunication Seminars and a Small Satellite Symposium, among others.

## ITU Standardization Sector (ITU-T)

- The ITU-T Focus Group on network aspects of IMT-2020 ('5G') has concluded its preliminary study into the wireline networking innovations required to achieve the ambitious performance targets of 5G systems. The group's output takes the form of five draft ITU international standards and four draft ITU technical reports to drive related work in ITU's standardization expert groups (ITU-T Study Groups). The Focus Group's final meeting in December 2016 hosted a "workshop and demo day" showcasing proofs of concept and demonstrations of the wireline technologies to enable future 5G systems.
- The ITU-T Focus Group on Digital Financial Services has concluded its work with the publication of 85 policy recommendations and 28 supporting thematic reports. The Focus Group brought together more than 60 organizations from over 30 countries to drive greater financial inclusion for the estimated 2 billion people still without access to a bank account.
- ITU-T has completed a set of highly anticipated broadband access technologies. G.fast was updated in 2016 to achieve up to 2 Gbit/s access speeds over traditional telephone wires. A new series of standards for 40-Gigabit-capable Fiber to the Home (NG-PON2) are the first to provide

fiber-optic access speeds beyond 10 Gbit/s. ITU-T boasts another major recent achievement in the revision of a key ITU standard underlying the Optical Transport Network, concluding a three-year process to enable optical transport at rates higher than 100 Gbit/s.

- Now in its fourth edition, ITU H.265 'High Efficiency Video Coding' – the successor to the Primetime Emmy award-winning ITU H.264 'Advanced Video Coding' – offers double the compression power of H.264 to provide the platform for the next decade of innovation in video. ITU-T Study Group 16 and the ISO/IEC Moving Pictures Expert Group are inviting experts to submit evidence supporting the case for a future video coding standard beyond today's ITU H.265.
- The United for Smart Sustainable Cities (U4SSC) initiative was established, primarily to advocate for public policy to ensure that ICTs play a definitive role in smart cities. U4SSC is supported by 16 United Nations agencies and programmes and is open to the participation of all stakeholders interested in driving smart-city innovation. The collaboration driven by this initiative has led 51 cities to join the pilot project implementing ITU's Key Performance Indicators for Smart Sustainable Cities.
- Held in Hammamet, Tunisia, from 25 October to 3 November 2016, WTSA-16 produced 16 new resolutions, 31 revised resolutions and 5 new standards. The directives of WTSA-16 call for ITU to expand its study of the wireline networking innovations necessary to support 5G systems. ITU members also reaffirmed the importance of ITU standardization work for ultra-high-speed transport networks, future video technologies, IoT, and smart cities and communities.

### ITU Development Sector (ITU-D)

- Preparations for WTDC-17 began, including the organization of six Regional Preparatory Meetings from November 2016 to April 2017 in Kyrgyz Republic, Rwanda, Sudan, Paraguay, Indonesia, and Lithuania.
- ITU-D Study Groups held their third and fourth meetings for the current study period.
- ITU-D provided data, research and analysis and tools (Trends reports, GSR discussion papers, publications, portals, databases).
- The capacity of ITU Member States to develop national e-strategies was built through the organization and preparation of forums, dialogs, technical assistance, toolkits and guides. The Global ICT Capacity Building Symposium was organized from 6 to 8 September 2016 in Kenya. ITU continued to strengthen capacities in Member States, by developing standardized training material through the Centres of Excellence
- The 2016 edition of the Measuring the Information Society Report was released in November 2016.
- World Telecommunication/ICT Indicators Symposium (WTIS) was organized from 21-23 November 2016 in Botswana.
- In 2016, Girls in ICT celebrations took place in 138 countries, with 66,000 girls participating in 1900 events.
- ITU has increased the awareness of the importance of ICTs for sustainable development, provided concentrated assistance as well as enhanced capacity to LDCs, LLDCs and SIDs, contributed to the adaptation and mitigation of climate change by setting up clean power generation systems, and facilitated emergency disaster response, strengthened capacity, and improved communications for disaster relief. It helped 15 Member States that were affected by disasters.

## Inter-Sectoral objectives and results

**ITU Telecom World** 2016 took place from 14 to 17 November in Bangkok, Thailand. It combined an exhibition for digital solutions, a forum for sharing knowledge, and an international Awards programme, and was a networking hub between nations, organizations, and individuals.

In 2016, the **WSIS Forum** attracted more than 1,800 WSIS stakeholders from more than 150 countries. Several high-level representatives of the wider WSIS stakeholder community graced the Forum with more than 85 ministers and deputies, several ambassadors, CEOs and civil society leaders contributing passionately towards the programme of the Forum.

Concerning **ITU and the United Nations**, ITU continued to play a key advocacy role for increased visibility of ITU's mandate within the UN system and of ICTs in the internationally agreed development agenda, and strengthening relationships with different stakeholders and partnerships.

In 2016, ITU continued its work in the areas of **ICT Accessibility, technology-oriented small and medium enterprises** (tech SMEs), **empowering of youth through telecommunication/ICTs**, and **ICTs, environment, and climate change**.

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## 1 Introduction: Aim of this Report

This Annual Progress Report is aligned with the new ITU Strategic Plan 2016-2019 approved at PP-14, including ITU-wide goals and targets, Sector and Inter-sectoral objectives, and focuses on progress made towards achievement of the strategic goals and objectives. The progress is measured and demonstrated in this report through the indicators that have been endorsed by membership in the operational plans of the three Sectors and the General Secretariat.

## 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.

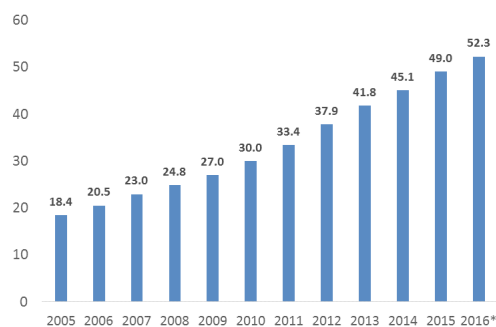
The four goals include 17 targets, designed to provide an indication of whether each of the goals is being achieved up to 2020 and to help ITU and other stakeholders to focus their priorities during that period.

Global Telecommunication/ICT Targets

### 2.1 Goal 1: Growth

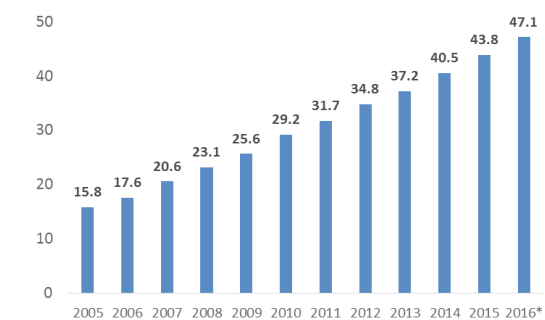
**Target 1.1: Worldwide, 55 per cent of households should have access to the Internet by 2020**

Figure 1: Households with Internet access worldwide, 2005-2016\*



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

Figure 2: Percentage of individuals using the Internet worldwide, 2005-2016\*

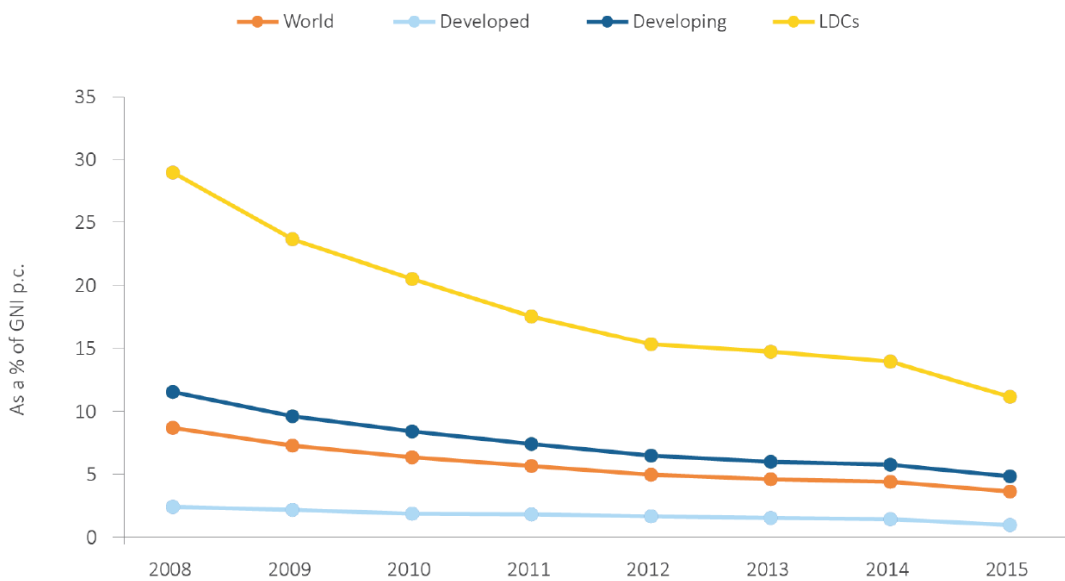


\* Estimate – Source: ITU Statistics Website

As noted in figures 1 and 2, the indicators used to highlight progress in relation to targets 1.1 and 1.2 show that in 2016, 52.3% of households and 47% of individuals globally are estimated to have access / be using the Internet, two percent and three percent, respectively, more than in 2015.

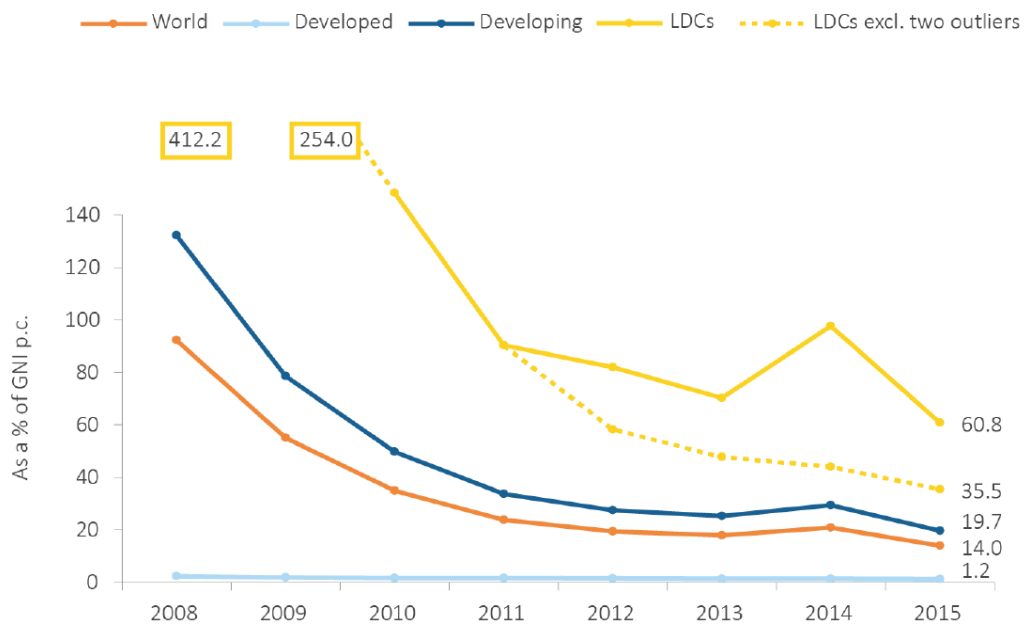
**Target 1.3: : Worldwide, telecommunication/ICT should be 40 per cent more affordable by 2020**

Figure 3: Mobile-cellular sub-basket, as a percentage of GNI p.c., 2008-2015:



**Target 1.3: : Worldwide, telecommunication/ICT should be 40 per cent more affordable by 2020**

Figure 4: Fixed-broadband sub-basket, as a percentage of GNI p.c., 2008-2015:



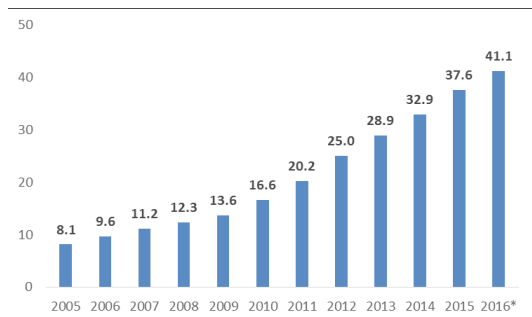
Source: Measuring the Information Society Report 2016

There has been a significant drop in fixed-broadband prices, mobile-cellular prices, and mobile broadband prices since data collection began. The data for 2016 will be available in the 2017 MIS Report.

## 2.2 Goal 2: Inclusiveness

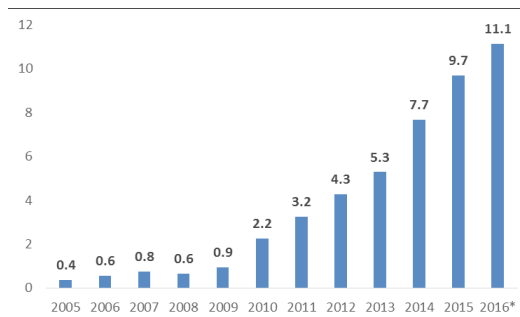
**Target 2.1.A: In the developing world, 50 per cent of households should have access to the Internet by 2020**

Figure 5: Households with access to the Internet, developing countries, 2005-2016\*



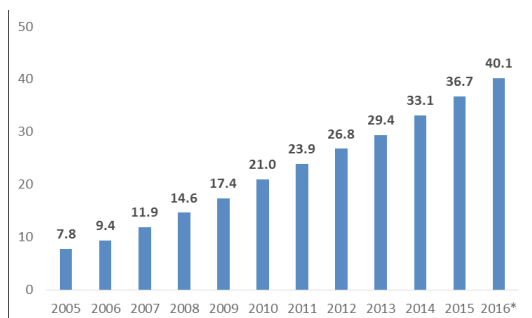
**Target 2.1.B: In LDCs, 15 per cent of households should have access to the Internet by 2020**

Figure 6: Households with access to the Internet, LDCs 2005-2016\*



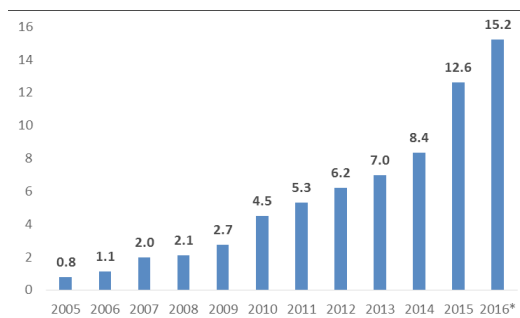
**Target 2.2.A: In the developing world, 50 per cent of individuals should be using the Internet by 2020**

Figure 7: Percentage of individuals using the Internet in developing countries, 2005-2016\*



**Target 2.2.B: In LDCs, 20 per cent of individuals should be using the Internet by 2020**

Figure 8: Percentage of individuals using the Internet in LDCs 2005-2016\*



\* Estimate – Source: ITU Statistics Website

Internet usage grew at an annual rate of 18 per cent in developing countries over the period 2005-2016, with an estimated 40.1 per cent of the population online at the end of 2016. For LDCs, Internet usage grew at an annual rate of 32 per cent in LDCs over the period 2005-2016, with an estimated 15 per cent of the population in LDCs being online at the end of 2016.

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

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 2015. See Figures 3 and 4.

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

By end-2015, a total of 129 economies (out of 185 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 amounts to 18 countries more than in early 2015. Altogether, 18 developing countries and 38 LDCs for which data were available need to achieve further reductions in broadband prices in order to achieve the target, together, it should be assumed, with a number of other countries for which no data were available. See Figures 3 and 4.

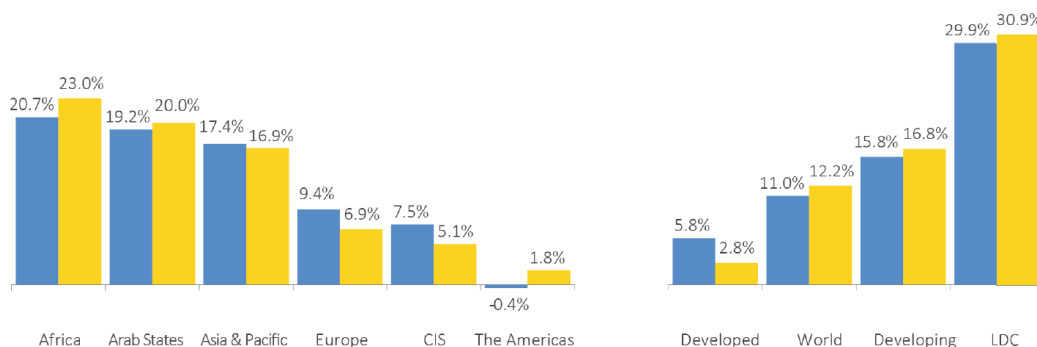
**Target 2.4: Worldwide, 90 per cent of the rural population should be covered by broadband services by 2020**

It is estimated that 3G network coverage grew from 45 per cent of world population in 2011 to 84% in 2016 (mobile-broadband networks; 3G or above), of the global population but only 67% of the rural population.

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

Data on Internet usage broken down by gender<sup>1</sup> points to a very clear gender divide. In the vast majority of countries, the proportion of men using the Internet is higher than the proportion of women. These findings are reflected at global level, where ITU reports a 2016 Internet user gender gap<sup>2</sup> of 12 per cent. Only in certain select countries, in Europe and the Americas in particular, are more women than men online, proportionally. Data also point to significant differences between developed and developing countries (see Figure 9 below). Differences in levels of education and school enrolment are important factors that could explain why more men than women use the Internet. Some of the countries in which more women than men are Internet users are also countries that do well on the gender parity index (GPI), which measures parity between girls and boys in terms of school enrolment ratios. The gender equality in these countries is also reflected by a high proportion of women in the labour force. Gender parity in tertiary education can also explain some of the differences in regional gender gaps. The smallest Internet user gender gap is observed in the Americas, where countries also score highly on GPI in tertiary education. This is in contrast with other regions with large gender gaps in Internet usage, especially in Africa and Asia and the Pacific, where many countries suffer from lower gender parity at higher levels of education. Among developing countries, the largest Internet gender gaps are found in countries with low levels of gender parity in tertiary education.

Figure 9: Internet user gender gap (2013 and 2016):



Source: ITU MIS Report

<sup>1</sup> Source: MIS Report 2016

<sup>2</sup> Gender gap is defined as the difference between the Internet user penetration rate for males and females in relation to the Internet user penetration rate for males, expressed as a percentage

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

For the past eight years, ITU has been working with the Global Initiative for Inclusive ICTs (G3ict) to gather and disseminate information and promote ICT accessibility in line with the UN Convention. In 2014, ITU and G3ict jointly published a Model ICT Accessibility Policy Report, designed to inform public policy on ICTs and disability and including a model institutional framework which builds on the ITU/G3ict online e Accessibility Policy Toolkit for Persons with Disabilities (ITU/G3ict, 2014). The model framework includes guidelines and recommendations in six areas of policy and practice, which will form the basis for assessment of this target.

## **2.3 Goal 3: Sustainability**

### **Target 3.1: Cybersecurity readiness should be improved by 40 per cent by 2020**

Following the publication of the Global Cybersecurity Index (GCI) of 2014, ITU has initiated a second iteration of the GCI and formed a partnership to bring together other parties involved in measuring cybersecurity. To measure improvement in cybersecurity within the context of the Connect 2020 Agenda, ITU proposes to combine the GCI results with key indicators of cybersecurity vision and capabilities at the country level: the existence of a national cybersecurity strategy and a national Computer Incident Response Team (CIRT). By combining the growth in the average GCI scores with the growth in the number of national cybersecurity strategies and national CIRTs, it will be possible to determine if the 40% improvement target in cybersecurity between 2014 and 2020 has been achieved.

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

ITU, together with the UNEP Basel Convention, United Nations Industrial Development Organization (UNIDO), UNU and ITU membership, has been developing a roadmap for implementing Target 3.2, which aims to establish a policy and regulatory and technical framework to steer production, handling, growth, and innovation in the ICT sector in a sustainable direction.

ITU Member States will be invited to prepare national reports on e-waste, and a report on national e-waste monitoring will be compiled in the following year. This will provide a basis for assessing progress on this target by 2020 and effectively reduce e-waste generation worldwide. ITU-T Study Group 5 is working on a roadmap for Target 3.2 on e-waste reduction. The methodology to assess progress towards target 3.2 on e-waste reduction will be based on ITU L.1430

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

As with e-waste, ITU, together with its Sector Members and industry associations, is in the process of developing a roadmap to address the challenges arising from these developments and the GHG emissions associated with them. ITU-T Study Group 5 is working on a roadmap for Target 3.3 on GHG emissions reduction.

## 2.4 Goal 4: Innovation and partnership

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

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

ITU is working with partners to develop indicators to measure achievement of Targets 4.1 and 4.2. In the case of Target 4.1, which is concerned with innovation capacity, it may be possible to establish proxy indicators that draw on ICT-focused data within data series which are used for wider innovation measurements such as the World Intellectual Property Organization's Global Innovation Index and the Global Entrepreneurship Monitor published annually by a group of international universities. In the case of Target 4.2, which is concerned with partnership, it will be necessary to develop new indicators for innovation which can be assessed alongside established indicators. Work will continue on the development of indicators for these targets.

## ITU Sector and Intersectoral Objectives

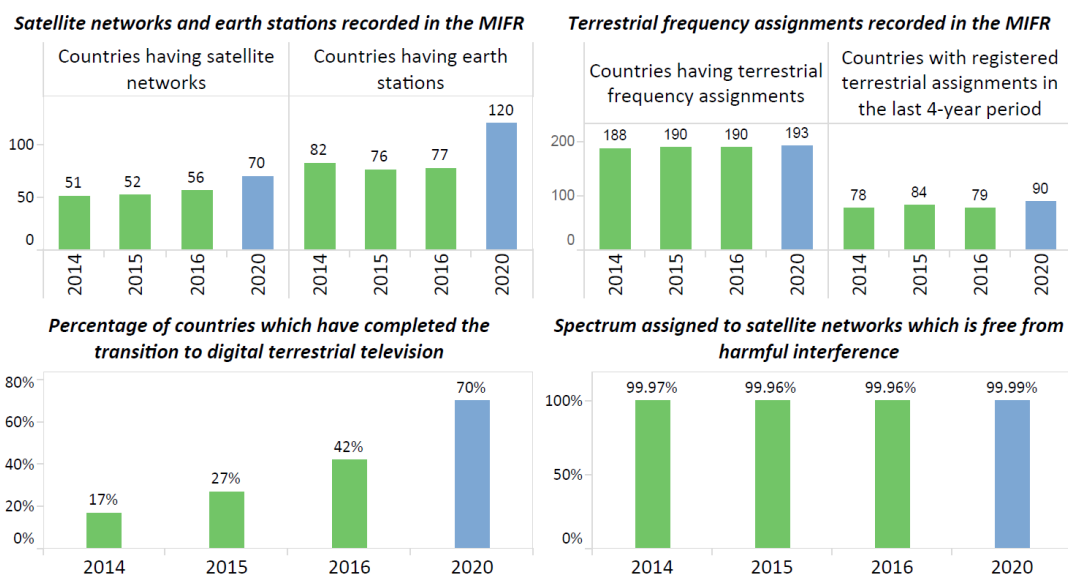
### 3 ITU-R objectives and results achieved (Radiocommunication Sector)

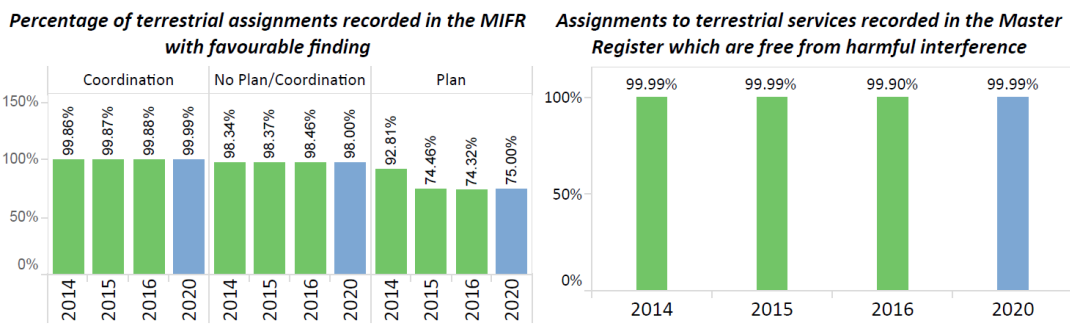
ITU-R Objectives		
R.1 Meet, in a rational, equitable, efficient, economical and timely way, the ITU membership's requirements for radio-frequency spectrum and satellite-orbit resources, while avoiding harmful interference	R.2 Provide for worldwide connectivity and interoperability, improved performance,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

Following the World Radiocommunication Conference 2015 (WRC-15), the updated version of the Radio Regulations (Edition of 2016) was published in December 2016 and made freely available to the public.

The Conference took a number of decisions, which are reflected in the updated Radio Regulations or recorded in the minutes of its plenary sessions. In particular, the Conference approved various resolutions relating to the preparation of WRC-19 and WRC-23. The preparatory studies requested by these resolutions are being conducted within ITU-R, with the support of the regional groups and other international organizations, and address the following topics:

- Earth stations on board unmanned aircraft<sup>3</sup>
- Earth stations in motion, Non-geostationary systems in the fixed-satellite service, High-altitude platform stations (HAPS)<sup>4</sup>
- International Mobile Telecommunications (IMT)<sup>5</sup>
- Wireless Access Systems including radio local area networks (R-LAN)<sup>6</sup>
- Intelligent Transport Systems (ITS)<sup>7</sup>
- Meteorological-satellite and Earth exploration-satellite services (space-to-Earth)<sup>8</sup>
- Machine-type communication infrastructures<sup>9</sup>

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

No regional radiocommunication conferences were organized during the considered period.

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

The RRB met three times in 2016 and adopted 32 new or revised Rules of Procedure (RoPs) relating to decisions by WRC-15 or practice by the Bureau on the application of the Radio Regulations and

<sup>3</sup> WRC-15 Res. 155; WSIS AL C2; SDG Targets 2.3, 2.4, 2.a, 14.a

<sup>4</sup> WRC-15 Res. 158, 159, 160; WSIS AL C2; SDG Target 9.c

<sup>5</sup> WRC-15 Res. 238; WSIS AL 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>6</sup> WRC-15 Res. 239; WSIS AL 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 AL C2, C3, C7; SDG Targets 3.6, 9.5, 9.c, 11.2

<sup>8</sup> WRC-15 Res. 766; WSIS AL 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

<sup>9</sup> WRC-15 Res. 958; WSIS AL C2, C3, C6, C7; SDG Targets 2.3, 2.4, 2.a, 3.6, 11.2, 11.5, 11.b, 13.1



Regional Agreements. Furthermore, a list of proposed new or revised RoPs is being maintained for the period 2016 – 2019 (see Document RRB16-2/3(Rev.4)).<sup>10</sup>

#### **R.1-4 Results of the processing of space notices and other related activities**

The processing of space notices covered the following elements:<sup>11</sup>

- 1,336 Advance Publication Information
- 401 requests for coordination for non-planned services, for which the treatment time increased beyond the four-month regulatory time limit, up to a maximum of 8 months, due to the unusually large number of submissions received at the end of WRC-15 and six months later as a result of the new allocations to FSS decided by WRC-15 and of the necessary modifications in processing software to reflect these decisions.
- 166 recordings of satellite networks in the MIFR
- 505 recordings of earth stations in the MIFR
- 41 requests for inclusion and 34 recordings in Appendices 30/30A Regions 1 and 3 Lists, 30 notifications pursuant to Article 5 of Appendices 30/30A.
- 42 requests for inclusion and 7 recordings in the Appendices 30B List, 7 notifications pursuant to Article 8 of Appendix 30B.
- 106 Due Diligence Information
- Cost recovery (CHF 15.6 million)
- 283 suppressions of satellite network filings, for not meeting the regulatory deadlines or the due diligence obligations, with the consent of the RRB, where appropriate.
- 77 cases of assistance provided to administrations for space stations and 368 for earth stations.
- 26 reports of harmful interference.

#### **R.1-5 Results of the processing of terrestrial notices and other related activities**

The processing of terrestrial notices covered the following elements:<sup>12</sup>

- 215 258 terrestrial notices for recording in the Master International Frequency Register and frequency Plans;
- 2 994 notifications containing 596 543 coast and ship stations for recording in the ITU maritime database;
- 12 341 high frequency broadcasting requirements.
- Maintenance of the reference databases on emergency communications, oceanographic radars, means of station identification, geographical and administrative data.
- 154 monitoring observations in the context of the monitoring program in the frequency band 406-406.1 MHz;

<sup>10</sup> CS No. 95, WRC-15 decisions recorded in the minutes of the plenary sessions; WSIS AL C2; SDG Target 9.c

<sup>11</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>12</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

- 48 832 monitoring observations in the context of the monitoring program in the frequency bands between 2 850 kHz and 28 000 kHz.
- 4 434 reports of harmful interference.

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

The RRB examined a number of requests relating to various terrestrial and satellite networks, and cases of harmful interference. This activity covered the following elements:<sup>13</sup>

- Suppression from the Master Register of frequency assignments of one satellite network pursuant to No. 13.6 of the RR, and maintenance of the frequency assignments of two other satellite networks.
- Extension of the regulatory deadline for bringing into use (BIU) of the frequency assignments of seven satellite networks, two of which were cases of co-passenger delay and four cases of force majeure. Rejection of one request to extend the deadline for one other satellite network. Rejection of a request to extend the regulatory deadline for electric propulsion satellites.
- Rejection of a request to reinstate a satellite network in the absence of replies to coordination requests.
- Reinstating of a satellite network following reference to CS Article 48 by the notifying administration.
- Re-instating of two satellite networks with unchanged date of receipt. Rejection of a request to change the date of receipt of a satellite filing.
- Rejection of a request to transfer the function of Notifying Administration for four satellite networks to another administration.
- Regular review by the RRB of the situation of harmful interference. With respect to the interference caused by Italian TV stations in the UHF band, a 3-year legal, financial and regulatory effort by the Italian administration resulted in the successful switch-off of Italian TV transmissions on 61 frequencies that had been causing harmful interference to the services of other countries.

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

The BR develops, updates and maintains a significant number of software applications and databases to assist in the implementation of the Radio Regulations and Rules of Procedure, and in particular to enable timely processing, examination and publication of the relevant terrestrial frequency notifications and satellite network filings. In order to take into account the evolution of the Radio Regulations and associated Rules of Procedure, the evolution of technology and security factors, these software applications and databases need continuing development and maintenance. In 2016, the ITU-R software and data bases benefited from the following elements:<sup>14</sup>

- Migration of the Global Administration Data System (GLAD) database from Ingres to SQL server, development of a new interface for updating GLAD information and creation of a new layout for the publication of GLAD information on the web.
- Development of a web application providing online access to the MIFR for all terrestrial services.
- Delivery of new and/or improved versions of space services processing software for external use (BR IFIC (Space)).

<sup>13</sup> CS No. 96 and 96; Art. 9, 11, 13, 14, 15, Appendices 4, 5, 7, 8, 30, 30A, 30B of the RR; Res. 4 (Rev.WRC-03), 49 (Rev. WRC-15), 80 (Rev.WRC-07); Regional Agreements GE84 and GE06; WSIS AL C2; SDG Targets 3.d, 4.7, 5.b, 9.c, 10.2, 11.4, 13.1, 16.7, 16.10

<sup>14</sup> PP Res. 186, Art. 12 of the CV, Art. 9, 11, 13, 14, 15, Appendices 4, 5, 7, 8, 30, 30A, 30B of the RR, Res. 85 (WRC-03), 163 (WRC-15), 164 (WRC-15), 908 (Rev. WRC-15); RRB RoP; RAG Advice to the Director; WP4A (Doc. 4A/669 Annex 14); WSIS AL C2; SDG Targets 1.4, 9.c, 17.7, 17.8, 17.9, 17.16

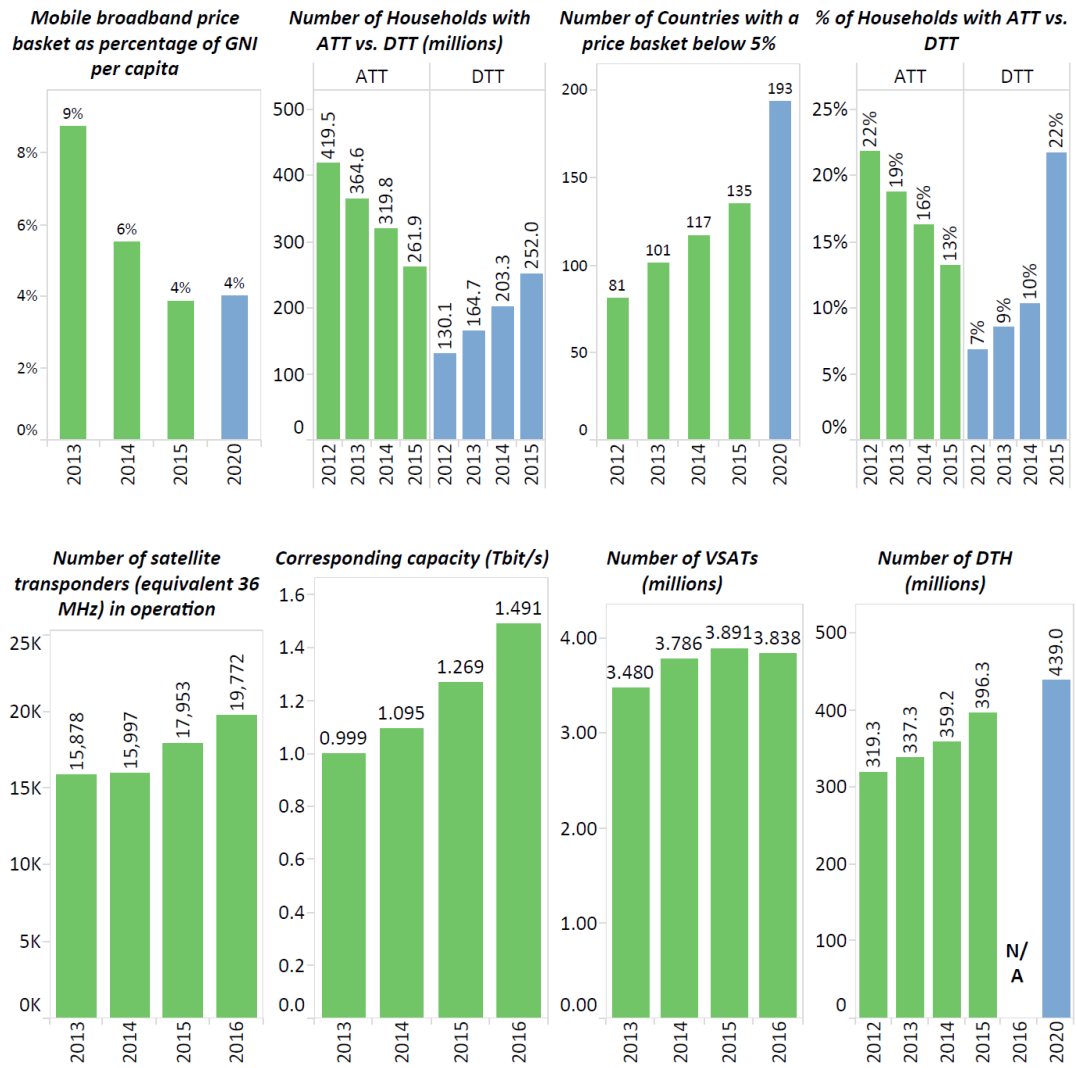
- Delivery of a new space services database scheme design, in response to WRC-15 and RRB decisions. The software and the new database were presented to the membership at WRS-16 and through circular letters CR/389, CR/393, CR/394, CR/403, and CR/411.
- Integration of two third-party software packages into the space services technical examinations software suite (GIBC), to allow for equivalent power-flux density (EPFD) validation calculations. This was presented to membership at WRS-16 and through circular letters CR/405 and CR/414.
- Maintenance of the SpaceWISC system for online submission and publication of advance publication information for space services networks subject to coordination. In parallel, a new system has been developed to implement the extension of the scope of Resolution 908 (WRC-12) from API to coordination and notification, as decided by WRC-15. The first deliverable is the as-received publication web site mentioned in circular letters CR/401 and CR/415.
- Steps toward the implementation of a database and corresponding web application for submission and publication of harmful interference reports for space services (SIRRS). The look and feel of the system was presented to membership at WRS-16 and the system will be available for external testing by the end of first quarter 2017.
- Delivery of new and updated versions of the reference databases (including new data and schemes) needed for the technical and regulatory examinations by the BR of terrestrial frequency assignments in the bands shared between terrestrial and space services, taking into account WRC-15 and RRB decisions.
- At the request of WP4A (Doc. 4A/669 Annex 14), implementation of changes in the way affected networks are indicated in the space systems technical examination software and database and made available a new website with information on affected networks (Notex). This new functionality was described in CR/397.
- Delivery of new and updated versions of all terrestrial services processing software, both for internal (TerRaSys) and external (BR IFIC (Terrestrial)) use, including improved database schemas and updated validation and examination software modules for the submission of terrestrial frequency notifications, as a consequence of WRC-15 and RRB decisions. The software enhancements and new requirements were presented to membership at WRS-16 and through the relevant circular letters.
- Development of an updated version of the Radio Regulations Navigation Tool, in order to incorporate the new version of the Radio Regulations and other relevant texts. The software was presented to membership at WRS-16.
- Delivery of a new software tool for the electronic display and analysis of RR5 Table of Frequency Allocations and associated footnotes. The software was presented to membership at WRS-16 and entered a joint beta test phase with the membership.
- Continuation of the work for improving the security of software applications and databases, as per the recommendations of the Radiocommunications Advisory Group (RAG) on the BR information System, including disaster recovery and business continuity procedures, isolation and protection from outside exposure.

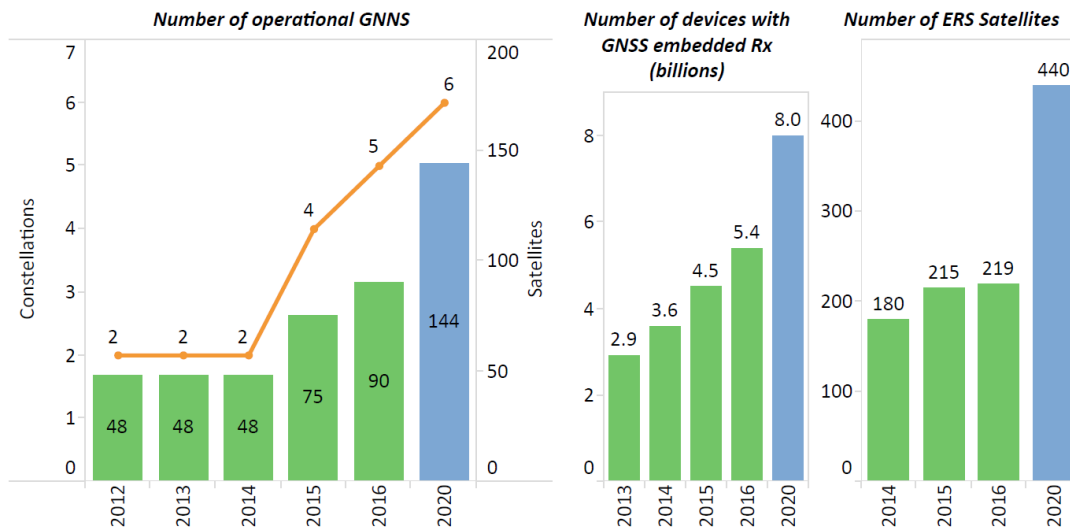
**Objective R.2: Provide for worldwide connectivity and interoperability, improved performance, quality, affordability and timeliness of service and overall system economy in radiocommunications, including through the development of international standards**

**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 Radiocommunication Assembly, ITU-R resolutions

In 2015, the Radiocommunication Assembly (RA) approved 36 new or revised ITU-R Resolutions inviting ITU-R to conduct studies on radiocommunication matters, including:

- Disaster prediction, detection, mitigation and relief<sup>15</sup>
- Reduction of energy consumption for environmental protection and mitigating climate change by use of ICT/radiocommunication technologies and systems<sup>16</sup>
- Future development of IMT for 2020 and beyond<sup>17</sup>
- Telecommunication/ICT accessibility for persons with disabilities and persons with specific needs<sup>18</sup>
- Improving the dissemination of knowledge concerning the applicable regulatory procedures for small satellites, including nanosatellites and picosatellites<sup>19</sup>
- Development and deployment of international public telecommunications via satellite in developing countries<sup>20</sup>

<sup>15</sup> PP Res. 136; Res. ITU-R 55; WSIS AL C2, C7; SDG Targets 1.5, 2.4, 9.C, 11.5, 11.b, 13.1

<sup>16</sup> Res. ITU-R 60-1; WSIS AL C2, C3, C7; SDG Targets 1.5, 2.4, 3.9, 7.3, 11.5, 11.b, 13.1, 13.3, 13.b, 14.1, 14.2

<sup>17</sup> PP Res.137, 139, 197, 200, and 203; Res. ITU-R 65; WSIS AL 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>18</sup> PP Res. 80 and 175; Res. ITU-R 67; WSIS AL C2, C4; SDG Targets 10.2, 11.2, 11.5, 11.B, 4.5, 4.A, 8.5

<sup>19</sup> PP Res. 80; Res. ITU-R 68; WSIS AL C6; SDG Target 17.6

<sup>20</sup> PP Res. 30, 34, 80, 135, 137, 139, 178, and 203; Res. ITU-R 69; WSIS AL C2; SDG Targets 9.C, 17.6

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

The ITU-R Study Groups developed 23 new or revised recommendations, 27 new or revised reports, and one new Handbook, including:

### **ITU-R Recommendations, Reports and Handbooks on terrestrial and satellite broadcasting services<sup>21</sup>**

Recommendations:

- BO.1784-1: Digital satellite broadcasting system with flexible configuration (television, sound and data)
- BO.2098-0: Transmission system for UHDTV satellite broadcasting
- BS.2094-0: Common definitions for the Audio Definition Model
- BT.1206-3: Spectrum limit masks for digital terrestrial television broadcasting
- BT.2036-1: Characteristics of a reference receiving system for frequency planning of digital terrestrial television systems
- BT.2095-0: Subjective assessment of video quality using Expert Viewing Protocol
- BT.2100-0: Image parameter values for high dynamic range television for use in production and international programme exchange

Reports:

- BO.2019-1: Interference calculation methods
- BO.2397-0: Satellite transmission for UHDTV satellite broadcasting
- BS.2213-3: Impact of audio signal processing and compression techniques on terrestrial FM sound broadcasting emissions at VHF
- BS.2214-2: Planning parameters for terrestrial digital sound broadcasting systems in VHF bands
- BS.2217-2: Compliance material for Recommendation ITU-R BS.1770
- BS.2388-1: Usage guidelines for the audio definition model and multichannel audio files
- BT.2049-7: Broadcasting of multimedia and data applications for mobile reception
- BT.2215-6: Measurements of Protection Ratios and Overload Thresholds for Broadcast TV Receivers
- BT.2245-2: HDTV and UHDTV test materials for assessment of picture quality
- BT.2252-2: Objective quality coverage assessment of digital terrestrial television broadcasting signals of Systems A and B
- BT.2267-6: Integrated broadcast-broadband systems
- BT.2301-2: National field reports on the introduction of IMT in the bands with co-primary allocation to the broadcasting and the mobile services
- BT.2343-2: Collection of field trials of UHDTV over DTT networks
- BT.2344-1: Information on technical parameters, operational characteristics and deployment scenarios of SAB/SAP as utilized in broadcasting
- BT.2382-1: Description of interference into a digital terrestrial television receiver
- BT.2383-1: Characteristics of digital terrestrial television broadcasting systems in the frequency band 470-862 MHz for frequency sharing/interference analyses

<sup>21</sup> Res. ITU-R 5-7; WSIS AL C2; SDG Targets 3.d, 4.7, 5.b, 9.c, 10.2, 11.4, 13.1, 16.7, 16.10

- BT.2389-0: Guidelines on measurements for digital terrestrial television broadcasting systems
- BT.2390-1: High dynamic range television for production and international programme exchange
- Handbooks:
- “Handbook on Digital Terrestrial Television Broadcasting networks and systems implementation”

#### **ITU-R Recommendations and Reports on the fixed-satellite service<sup>22</sup>**

Recommendations:

- S.2099-0: Allowable short-term error performance for a satellite hypothetical reference digital path
- Reports:
- S.2223-1: Technical and operational requirements for GSO FSS earth stations on mobile platforms in bands from 17.3 to 30.0 GHz

#### **ITU-R Recommendations and Reports on radiowave propagation<sup>23</sup>**

Recommendations:

- P.311-16: Acquisition, presentation and analysis of data in studies of radiowave propagation
- P.341-6: The concept of transmission loss for radio links
- P.372-13: Radio noise
- P.453-12: The radio refractive index: its formula and refractivity data
- P.525-3: Calculation of free-space attenuation
- P.531-13: Ionospheric propagation data and prediction methods required for the design of satellite services and systems
- P.676-11: Attenuation by atmospheric gases
- P.681-9: Propagation data required for the design of Earth-space land mobile telecommunication systems
- P.684-7: Prediction of field strength at frequencies below about 150 kHz
- P.833-9: Attenuation in vegetation
- P.834-8: Effects of tropospheric refraction on radiowave propagation
- P.841-5: Conversion of annual statistics to worst-month statistics

Reports:

- P.2345-1: Defining propagation model for Recommendation ITU-R P.528-3
- P.2346-1: Compilation of measurement data relating to building entry loss

#### **ITU-R Recommendations and Reports on spectrum measurements and spectrum management<sup>24</sup>**

Recommendations:

- SM.2093-0: Methods for measurements of indoor radio environment
- SM.2096-0: Test procedure for measuring direction finder sensitivity in the VHF/UHF frequency range

<sup>22</sup> Res. ITU-R 5-7; WSIS AL C2; SDG Target 9.c

<sup>23</sup> Res. ITU-R 5-7; Res. 238 (WRC-15); WSIS AL C2; SDG Target 9.c

<sup>24</sup> Res. ITU-R 5-7; WSIS AL C2; SDG Targets 7.b, 9.c, 11.6, 11.b

- SM.2097-0: On-site accuracy measurements of a fixed direction finder system

Reports:

- SM.2012-5: Economic aspects of spectrum management
- SM.2256-1: Spectrum occupancy measurements and evaluation
- SM.2351-1: Smart grid utility management systems
- SM.2391-0: The effects of wind turbines on fixed radio direction finders
- SM.2392-0: Applications of wireless power transmission via radio frequency beam

#### **ITU-R Recommendations and Reports on fixed and mobile services<sup>25</sup>**

Reports:

- F.2393-0: Use of fixed service for transport of traffic, including backhaul, for IMT and other terrestrial mobile broadband systems
- F.2394-0: Compatibility between P-P applications in the fixed service operating in the 71-76 GHz and 81-86 GHz bands and automotive radar applications in the radiolocation service operating in the 76-81 GHz bands
- M.2014-3: Digital land mobile systems for dispatch traffic
- M.2291-1: The use of International Mobile Telecommunications (IMT) for broadband Public Protection and Disaster relief (PPDR) applications
- M.2395-0: Introduction to railway communication systems in certain countries

#### **ITU-R Recommendations and Reports on the mobile-satellite service<sup>26</sup>**

Reports:

- M.2396-0: Use of mobile-satellite service systems for flight tracking
- M.2398-0: Scenarios and performance of an integrated MSS system operating in frequency bands below 3 GHz.

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

The Radiocommunication Advisory Group (RAG) held its annual meeting to review the priorities and strategies adopted in the Sector, provide guidance for the work of the Study Groups and recommend measures to foster cooperation and coordination with other organizations and with the other ITU Sectors. The outputs of the RAG included:<sup>27</sup>

- Advice to the BR Director on further development of the BR information system, preparations for both the RA and the WRC to be held in 2019, as well as on the working methods of the RA, Study Groups and related groups.
- Advice on the priorities, programmes, operations, financial matters and strategies related to the work of the Sector, on the progress in the implementation of the programme of work, including the four-year rolling operational plan.
- Creation of a Rapporteur Group to follow the software developments undertaken in response to Resolutions 907 (Rev. WRC-15) and 908 (Rev. WRC-15).

<sup>25</sup> Res. ITU-R 5-7; WSIS AL C2; SDG Targets 9.c, 11.2, 11.5

<sup>26</sup> Res. ITU-R 5-7; WSIS AL C2; SDG Targets 9.c, 11.2

<sup>27</sup> Art. 11A of the CV, Res. ITU-R 52; WSIS AL C2; SDG Target 9.c



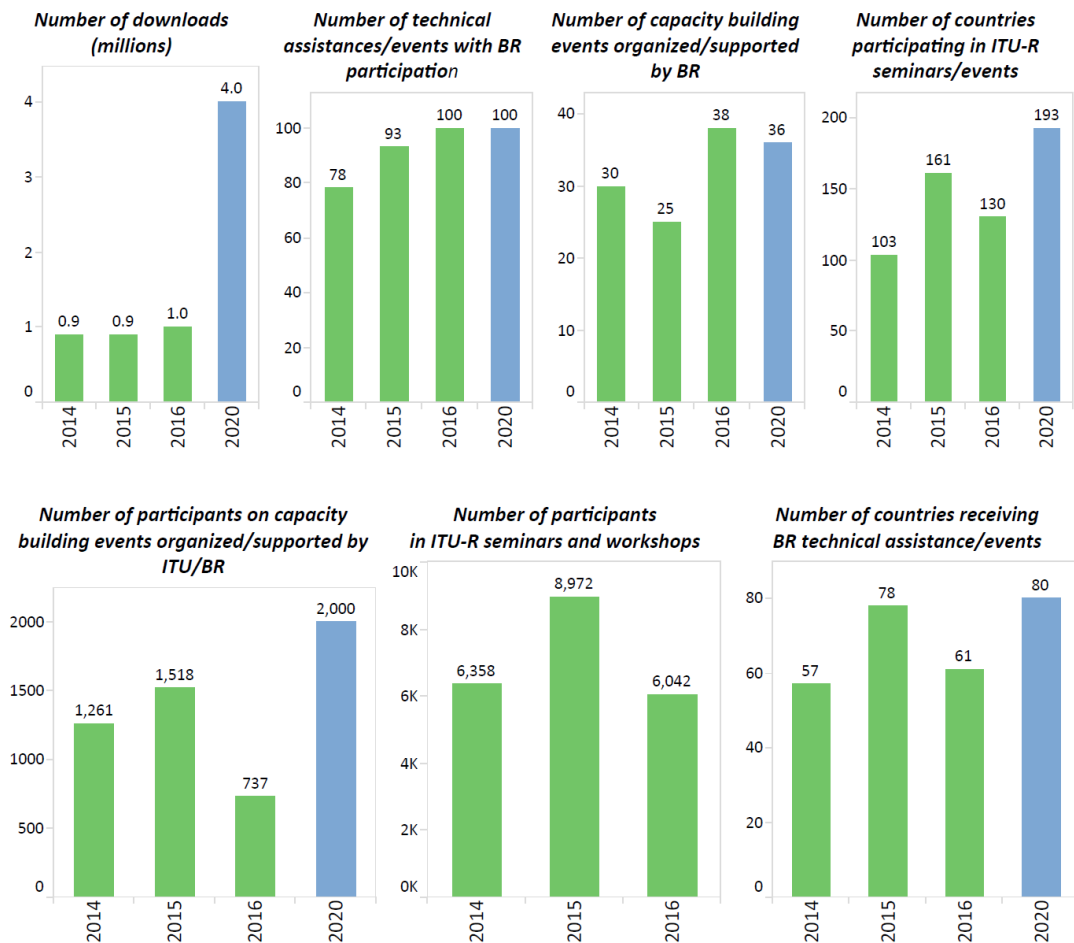
## Objective R.3: Foster the acquisition and sharing of knowledge and know-how on radiocommunications

### 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

The dissemination of the outputs produced by the ITU-R regarding the Radio Regulations, Rules of Procedures, Handbooks, ITU-R Recommendations, ITU-R Reports and ITU-R software.<sup>28</sup>

<sup>28</sup> Res. 9, 71; WSIS AL C2; SDG Targets 1.4, 9.c, 17.7, 17.8, 17.9, 17.16

### **Radio Regulations (2012 edition) and Rules of Procedure (RoP)**

Following the free online access policy adopted by Council, year 2016 resulted in the following number of free downloads:

- 2991 Radio Regulations, RR (2012 edition), from 30 countries.
- 1867 Rules of Procedures, from 43 countries.

Accumulated Radio Regulations numbers (2014-2016) sum 12,166 free downloads made from more than 165 countries and 4,783 sold copies of the Radio Regulations, RR (2012 edition) prior to the publication of RR (2016 edition).

### **Handbooks on radio-frequency spectrum management**

3624 downloads of handbooks were made, the most popular one being the Spectrum Monitoring (44%) followed by the National Spectrum Management (36%).

### **ITU-R Recommendations and ITU-R Reports**

In 2016, more than 829,000 downloads of ITU-R Recommendations (18 series, 1,152 in force) and more than 231,000 downloads of ITU-R Report (13 series, 411 in force) were registered.

### **Radio Regulations tools**

As indicated in section R.1-7 above, the Bureau has developed new software tools to facilitate the use and review of the Radio Regulations. These tools are currently being updated to take into account feedback received and WRC-15 decisions. The navigation tool was made available in its RR-2012 edition from January 2016.

### **R.3-2 Assistance to members, in particular developing countries and LDCs**

BR continued to provide assistance, in particular to developing countries, as follows:<sup>29</sup>

- Provision of support to 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 (seven countries):
  - Provision of technical assistance (six countries).
  - Individual or group training at ITU headquarters on radio regulatory procedures upon demand from interested administrations (one country).
- Support to the meetings of the regional groups and their initiatives, such as the support to frequency coordination activities in the UHF band in the Caribbean and Central American region, in cooperation with CITEL, COMTELCA and CTU, assistance to the SEDDIF (South Eastern Digital Dividend Implementation Forum).

### **R.3-3 Liaison/support to development activities<sup>30</sup>**

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

During 2016, BR has been actively participating in a joint project with BDT to develop a *Spectrum Management Training Programme*.

<sup>29</sup> Res. 9, 71; WSIS AL C2; SDG Targets 3.d, 4.7, 5.b, 10.2, 11.4, 12.a, 13.1, 16.7, 16.10

<sup>30</sup> Res. 9, 71, 72; WSIS AL C11; SDG Targets 17.7, 17.8, 17.9, 17.16, 17.19

BR has also strengthened its cooperation with international, regional and sub-regional organizations on topics related to the use of spectrum or radiocommunication services, by organizing, promoting and participating in events towards capacity building. These organizations include APT, ASMG, ATU, CEPT, CITEL, RCC, EBU, ESOA, IEC, GSMA, GSA, GVF, ICTO, ITSO, UNDAC, the CTU (Caribbean Telecommunications Union), PITA (Pacific Islands Telecommunications Association), and the CTO (Commonwealth Telecommunications Organization).

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

As a complement to the World Radiocommunication Seminars, BR has implemented, in consultation with the RAG, a strategy for regional outreach through the organization of yearly cycles of Regional Radiocommunication Seminars (RRS), held in different regions worldwide, fostering human capacity building on the use of the radio-frequency spectrum and the satellite orbits, and, in particular, the application of the provisions of the ITU Radio Regulations. These seminars are hosted by the entity in charge of spectrum management in the host country, in cooperation with the relevant regional organizations and the ITU regional/areas offices.

42 full fellowships and 10 partial fellowships have been granted by BR for RRS and WRS participants of eligible countries.

All workshops and events organized by BR in 2016 can be found at: <http://www.itu.int/ITU-R/go/seminars>.<sup>31</sup>

The new cycle of events after WRC-15, included, in particular:

- WRS-16: 453 participants from 109 countries
- Two RRS-16: 104 participants from 21 countries (RRS-16 Americas and RRS-16 Asia & Pacific with 36 participants from 11 countries and 68 participants from 10 countries respectively)
- Total: 3 seminars, 557 participants from 131 countries

Other events organized by BR included Satellite Symposiums and the Internet of Things Workshop.

On 12 December 2016 in Geneva, ITU celebrated the 110th anniversary of the Radio Regulations. Details can be found in document C17/13.

## 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

<sup>31</sup> Res. 9, 71, 72; WSIS AL C4, C11; SDG Targets 1.4, 1.5, 2.3, 3.d, 4.b, 13.1, 17.7, 17.8, 17.9, 17.16, 17.19

**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)

Held in Hammamet, Tunisia, from 25 October to 3 November 2016, WTSA-16 produced 16 new resolutions, 31 revised resolutions, and five new standards.

ITU membership has called for ITU's standardization arm to expand its study of the wireline networking innovations required to achieve the ambitious performance targets of smart 5G systems. This call has come in parallel with ITU membership's reaffirmation of the importance of ITU's standardization work to drive the coordinated development of ultra-high-speed transport networks, the Internet of Things, future video technologies, and smart cities and communities.

ITU membership has also encouraged ITU standardization to increase digital financial inclusion, promote affordable mobile roaming tariffs, and strengthen consumer protection and ICT service quality. There has also been a call for ITU standardization to support the use of cloud computing to record event data from aircraft, vehicles, and other connected machinery.

WTSA-16 refined ITU-T's strategic direction and structure to support the next phase of innovation. It also consolidated the progress that ITU-T achieved over the past four years.

All WTSA resolutions can be found here.

### T.1-2 WTSA regional consultation sessions<sup>32</sup>

Twenty-one Regional WTSA-16 Preparatory Meetings were held from March 2015 to September 2016, organized by regional telecommunication organizations in coordination with ITU. Four meetings were held in Asia and the Pacific; two in the CIS region; four in Arab States; four in the Americas; three in Africa; and five in the CEPT region.

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

Activities of the TSAG during 2016 are described here.

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

ITU-T continues to provide leadership in the standardization of **broadband access** and **home networks** and infrastructures for **ultra-high-speed transport**; as well as **future networks including 5G** and networking innovations in fields such as **software-defined networking** and **cloud computing**.<sup>33</sup> ITU **multimedia** standards offer a common platform for innovation and are essential in easing the burden on global networks increasingly geared towards the massive exchange of video traffic.<sup>34</sup>

ITU standards supporting the **Internet of Things** will assist both developed and developing countries in transforming city infrastructure, benefiting from the efficiencies of intelligent buildings and transportation systems; smart energy and water networks; and innovation in the field of e-health.<sup>35</sup>

ITU standards providing interoperability design guidelines for **personal health systems** are supporting the development of medical-grade e-health devices such as blood pressure cuffs, glucose monitors, weight scales and a wide range of activity trackers.<sup>36</sup>

<sup>32</sup> WTSA Res. 43; WSIS AL C3, C11; SDG Targets 10.6, 17.6

<sup>33</sup> WTSA Res. 2; WSIS AL C2; SDG Targets 8.2, 9.1, 9.C

<sup>34</sup> WTSA Res. 2; WSIS AL C2; SDG Targets 9.1, 9.C

<sup>35</sup> WTSA Res. 2, 98; WSIS AL C1, C2, C7 e-health; SDG Targets 3.4, 3.8, 6.4, 6.5, 7.b, 9.1, 9.4, 11.2

<sup>36</sup> WTSA Res. 2, 98; WSIS AL C C7 e-health; SDG Targets 3.4, 3.7, 3.8

ITU's work to build **confidence and security in the use of ICTs** aims to facilitate more secure network infrastructure, services and applications, and ITU members are engaged in a new standardization effort to describe the fundamentals of a trusted ICT environment.<sup>37</sup>

ITU's **'green ICT'** standards are contributing to the reduction of the ICT sector's environmental footprint as well as those of other industry sectors.<sup>38</sup>

ITU standards to assist in the responsible **management of electromagnetic fields** include measuring techniques, procedures and numerical models for evaluating the electromagnetic fields stemming from telecommunication systems and radio terminals.<sup>39</sup>

The **ITU/WMO/UNESCO-IOC Joint Task Force on SMART Cable Systems** is leading an ambitious new project to equip submarine communications cables with climate and hazard-monitoring sensors. ITU standardization continues to tackle **disaster relief, network resilience and recovery**, recognizing that the 21st century is playing host to an increasing prevalence of extreme weather events.<sup>40</sup>

The international community is looking to ITU-T for a neutral platform to strengthen the ties between technical innovation, business needs and **economic and policy requirements**.<sup>41</sup>

ITU standardization work on **performance, quality of service (QoS) and quality of experience (QoE)** spans the full spectrum of terminals, networks and services, ranging from speech over fixed circuit-switched networks to multimedia applications over mobile and packet-based networks.<sup>42</sup>

ITU technical work to **combat ICT counterfeiting** continues to gain momentum with new standards under development, supported by ongoing studies into the scale and dynamics of the counterfeiting challenge.<sup>43</sup>

### 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** is a partnership of ITU, ISO, and IEC to promote international standards.<sup>44</sup> **ITU-T 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>45</sup>

ITU-T is leading efforts to improve the capacity of developing countries to participate in the development and implementation of international ICT standards, using the vehicle provided by **ITU's Bridging the Standardization Gap (BSG) programme**.<sup>46</sup>

The **ITU conformity and interoperability (C&I) programme** is of particular value to developing countries in their efforts to increase conformance with ITU standards and benefit from the improved interoperability that results from this conformance.<sup>47</sup>

**Chief Technology Officer meetings:** CTO meetings bring together industry executives to highlight their business priorities and supporting standardization strategies.<sup>48</sup>

<sup>37</sup> WTSR Res. 2, 50; WSIS AL C5; SDG Targets 9.C, 16.10

<sup>38</sup> WTSR Res. 2, 73, 79; WSIS AL C7 e-environment; SDG Targets 12.4, 13.b

<sup>39</sup> WTSR Res. 2, 72; WSIS AL C7 e-environment; SDG Targets 12.4, 13.b

<sup>40</sup> WTSR Res. 2; WSIS AL C7 e-environment; SDG Targets 11.5, 13.1

<sup>41</sup> WTSR Res. 2, 88; WSIS AL C2; SDG Target 9.C

<sup>42</sup> WTSR Res. 2, 95; WSIS AL C6; SDG Target 3.6

<sup>43</sup> WTSR Res. 96; WSIS AL C5; SDG Target 16.4

<sup>44</sup> WTSR Res. 7; WSIS AL C3; SDG Targets 9.1, 9.4, 9.8

<sup>45</sup> WTSR Res. 2, 70; WSIS AL C3; SDG Target 10.2

<sup>46</sup> WTSR Res. 44; WSIS AL C4; SDG Targets 9.5, 10.6, 17.6, 17.9

<sup>47</sup> WTSR Res. 76; WSIS AL C2; SDG Targets 9.C, 17.6

<sup>48</sup> WTSR Res. 68; WSIS AL C1, C2, C11; SDG Targets 9.C, 17.6

24 ICT industry executives and the strategic management of ITU-T met in Hammamet, Tunisia, 23 October, hosted by Tunisie Télécom. Participants highlighted the importance of innovation capitalizing on VoLTE and other unique opportunities presented to network operators by advanced packet-based communications. They agreed that Gigabit-speed broadband access and data security will form key priorities to industry in coming years. Executives also pointed to the importance of regulation creating a level playing field for competition between telecoms and OTT players in fields where they provide equivalent services. Read news on the event, or read the meeting's full set of conclusions issued as a communiqué.

**CJK CTO consultations:** Consultations with CTOs of China, Japan and Korea – in 2015 and 2016 (press release) – called for standardization to support networking innovations to meet the demands of 5G systems, rapid growth in video traffic and ubiquitous smart technologies.<sup>49</sup>

**e-Health:** ITU-T continues its longstanding collaboration with bodies active in the healthcare field, such as the World Health Organization (WHO), the Personal Connected Health Alliance (formerly Continua Health Alliance), the Institute of Electrical and Electronics Engineers (IEEE), the International Organization for Standardization (ISO), the European Committee for Standardization (CEN), Health Level Seven International (HL7), Joint Initiative Council (JIC), Digital Imaging and Communications in Medicine (DICOM), European Telecommunications Standards Institute (ETSI), GSMA, and the World Wide Web Consortium (W3C).<sup>50</sup>

**Aviation applications of cloud computing for flight-data monitoring:** The ITU-T Focus Group on flight-data monitoring benefited from the participation of the International Civil Aviation Organization (ICAO) and the International Air Transport Association (IATA), as the participation of the aviation and avionics sectors was crucial to ITU-T's study of aviation applications of cloud computing for flight data monitoring.<sup>51</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>52</sup>

**Smart Sustainable Cities:** ITU and UNECE have launched the United for Smart Sustainable Cities (U4SSC), a global initiative which advocates for public policy to encourage the use of ICTs in enabling the transition to smart sustainable cities. U4SSC is supported by 17 United Nations Agencies and Regional Commissions, and is open to all United Nations agencies, municipalities, industry, academia, and other relevant stakeholders.<sup>53</sup>

ITU is involved in several smart city pilot projects (with cities including Wuxi, Manizales, Dubai, Singapore, Santiago de Chile, Montevideo, and Rimini) to measure the smartness and sustainability of the participating city. The pilot projects are also expected to generate inputs for the refinement of these KPIs and subsequent approval within ITU-T SG20 on IoT and Smart Cities and Communities.

Following the completion of the first year of the Dubai pilot project, the Dubai Case Study was published in December 2016. This case study documents the Smart Dubai journey from its initial planning stages through to the current status of related ICT applications, highlighting lessons learned along the way. The study offers an evaluation of Dubai's progress in meeting its smart-city objectives, evaluations undertaken using ITU's KPIs.

To cater to the international standardization activities on smart cities within ITU, the ITU-T SG20 on Internet of Things and Smart Cities and Communities has developed a series of Supplements, available

<sup>49</sup> WTS Res. 68; WSIS AL C1, C2, C11; SDG Targets 9.C, 17.6

<sup>50</sup> WTS Res. 2, 78; WSIS AL C7 e-health, C11; SDG Targets 3.8, 17.16

<sup>51</sup> WTS Res. 94; WSIS AL C11; SDG Target 17.6

<sup>52</sup> WSIS AL C11; SDG Target 17.6

<sup>53</sup> WTS Res. 2, 73, 98; WSIS AL C7 e-environment, C11; SDG Targets: 6.3, 6.4, 7.b, 9.1, 9.a, 11.2, 11.3, 11.6, 11.7, 11.b, 11.c, 12.4, 13.b, 17.7, 17.14, 17.15, 17.16, 17.19

on the Study Group's website. **ICT, environment and climate change:** ITU-T has strengthened its cooperation with other bodies active in tackling environmental issues, including ETSI, IEEE, WHO, the World Meteorological Organization (WMO), UNECE, the UN Educational, Scientific and Cultural Organization (UNESCO), the Intergovernmental Oceanographic Commission of UNESCO (UNESCO-IOC), United Nations University, UNIDO, the UN Environment Programme (UNEP), the Economic Commission for Latin America and the Caribbean (ECLAC), the UN Framework Convention on Climate Change (UNFCCC), the Inter-American Telecommunication Commission (CITEL), the World Intellectual Property Organization (WIPO), the Basel Convention, the UN Development Programme (UNDP), UN-Habitat, the Comisión Técnica Regional de Telecomunicaciones (Comtelca), the Global e-Sustainability Initiative (GeSI), Solving the e-Waste Problem (Step), and the Asociación Interamericana de Empresas de Telecomunicaciones (ASIET).<sup>54</sup>

ITU-T Study Group 5 continues to develop standards and best practices to combat climate change, promote environmental sustainability and reduce energy consumption. Within the ITU Academy, ITU is developing a standardized set of training materials for a training programme on ICTs and Climate Change. The content of this training programme is currently being reviewed by a number of ITU experts. In order to raise awareness, ITU has organized a series of events and trainings, and will continue these in 2017.

#### T.1-6 Conformity database

The "ICT product conformity database" provides industry with a means to publicize the conformance of ICT products and services to ITU-T Recommendations. The database assists users in their efforts to select standards-compliant products.

**e-Health solutions** included in the database were tested for compliance with the specifications of the ITU-T H.810 "Interoperability design guidelines for personal health systems" sub-series, which are a transposition of the Continua Design Guidelines as international standards. The testing procedures are specified in the ITU-T H.820-H.850 sub-series of Recommendations.<sup>55</sup>

**Mobile phones** included in the database were found to be compatible with Bluetooth-enabled vehicle hands-free terminals, compatibility 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>56</sup>

**Ethernet products** included in the database were found to comply with ITU-T G.8011/Y.1307 "Ethernet Services Characteristics". This standard as well as the corresponding tests are based on the work of MEF (formerly called Metro Ethernet Forum).<sup>57</sup>

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

Conformance and Interoperability (C&I) events showcase emerging standards-based technologies and highlight opportunities to improve their interoperability.

An ITU-T series of regular **IPTV testing events** offers a continuous platform to test products based on both existing and developing ITU-T IPTV standards. Learn more about IPTV testing events here. Recent events June and September 2016 focused on new IPTV products and services built on ITU-T H.702 and ITU-T H.721, with the findings of these events contributing to discussions in ITU-T SG16.<sup>58</sup>

<sup>54</sup> WTSR Res. 2, 73, 79; WSIS AL C7 e-environment, C11; SDG Targets 1.5, 2.4, 6.4, 7.3, 7.a, 7.b, 9.4, 9.a, 9.c, 11b, 13.1, 13.2, 13.3, 13.b, 17.7, 17.14

<sup>55</sup> WTSR Res. 2, 76, 78; WSIS AL C7 e-health, C11; SDG Target 3.8

<sup>56</sup> WTSR Res. 2, 76; WSIS ALC2, C6; SDG Targets 9.1, 9.C

<sup>57</sup> WTSR Res. 2, 76; WSIS AL C2, C6; SDG Targets 9.1, 9.C

<sup>58</sup> WTSR Res. 2, 76; WSIS AL C2, C6; SDG Targets 9.1



**Speech quality tests for vehicle hands-free systems** are defined in ITU-T P.1100 “Narrow-band hands-free communication in motor vehicles” and ITU-T P.1110 “Wideband hands-free communication in motor vehicles”. These tests help industry players to configure their products for greater interoperability, ultimately to improve the performance of mobile phones as gateways to car hands-free systems. The 2nd ITU test event on the performance of mobile phones as gateways to car hands-free systems, 23-25 May 2016, saw the participation of Bosch, Toyota, Jaguar Land Rover Limited, and Continental Automotive GmbH. Learn more about the HFT testing here. ITU also organizes on-demand testing of mobile phones upon the request of clients interested in determining which mobile phones perform as required when functioning as gateways to car hands-free telephone systems.<sup>59</sup>

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

ITU-T continues to develop test suites to test conformance with ITU-T standards. ITU-T H.810 contains the Continua Design Guidelines providing “Interoperability design guidelines for personal health systems”, supporting medical-grade personal e-health devices. The full text of the press release is available here. The ITU-T H.820-H.850 series presents a suite of conformance-testing specifications for ITU-T H.810 comprising over 1,000 test cases (ITU-T H.820-H.850 series).<sup>60</sup>

A work plan to standardize the benchmarking of IMS platform has been finalized. 10 new ITU-T standards (ITU-T Q.3930; Q.3931.1/2/3/4; Q.3932.1/2/3/4; and Q.3933) cover basic concepts of benchmark testing and detailing the benchmark testing for PSTN/ISDN emulation, IMS/NGN/PES and VoLTE, as well as the reference benchmarking for VoIP and Fax over IP in fixed networks.<sup>61</sup>

Fixed network operators have initiated a Session Initiation Protocol – IMS (SIP-IMS) standardization plan in ITU-T (webpage). The plan is guiding ITU-T’s development of a set of international standards and related test specifications to provide a unified international reference for the implementation of SIP-IMS on fixed networks. These standards may be used for the conformity assessment of SIP-IMS-based equipment on fixed networks. For new ITU-T standards on requirements and relevant test specifications for basic call and supplementary services for SIP-IMS, see the SIP-IMS standardization work plan.<sup>62</sup>

New ITU-T work launched in 2016 seeks to broker the international agreement of a framework for the **interconnection of Voice and Video over LTE (VoLTE/ViLTE)-based networks**. The framework will assist in expanding industry’s offer of VoLTE/ViLTE ‘roaming’, where interactions between subscribers of different networks will be supported by seamless packet-based, high-quality voice and video communications. The full text of the press release is available here. The span of ITU-T work on VoLTE/ViLTE includes the deployment of signalling protocols for VoLTE interconnection, relevant numbering issues, quality of service (QoS) considerations, and emergency calls on VoLTE-based networks.<sup>63</sup>

## 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>59</sup> WTS Res. 2, 76; WSIS AL C2, C6; SDG Targets 3.6, 9.1

<sup>60</sup> WTS Res. 2, 76, 78; WSIS AL C7 e-health; SDG Target 3.8

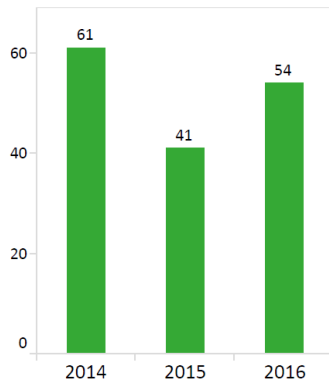
<sup>61</sup> WTS Res. 2, 76; WSIS AL C2; SDG Targets 9.1, 9.C

<sup>62</sup> WTS Res. 2, 76; WSIS AL C2; SDG Targets 9.1, 9.C

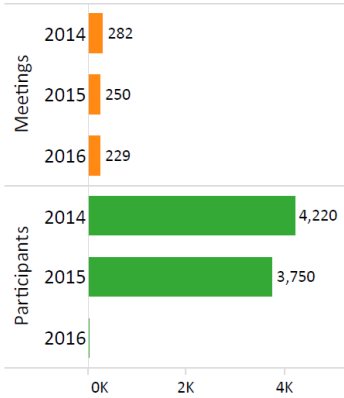
<sup>63</sup> WTS Res. 2, 76, 93; WSIS AL C2; SDG Target 9.1

## Progress achieved

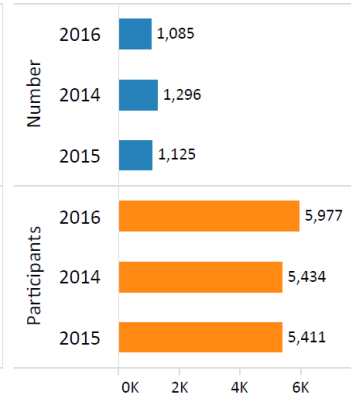
**SG Meetings, WP meetings and workshops held in and outside Geneva**



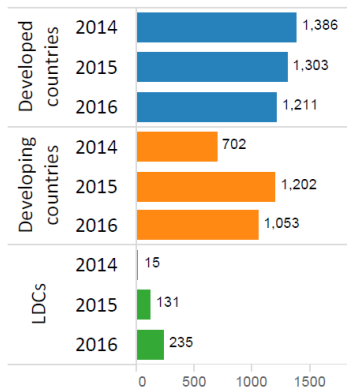
**Rapporteur meetings**



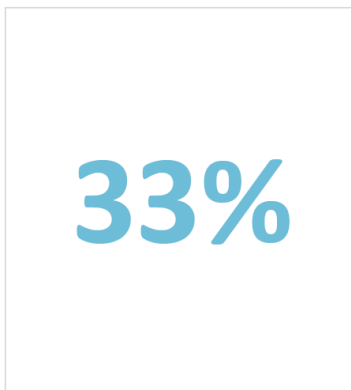
**E-meetings**



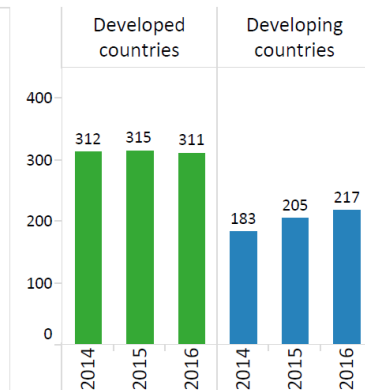
**Contributions submitted by participants**



**Leadership positions held by developing countries**



**ITU-T Total Sector Member, Associate, Academia members**



## Outputs

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

ITU-T is leading efforts to improve the capacity of developing countries to participate in the development and implementation of international ICT standards, using the vehicle provided by **ITU's Bridging the Standardization Gap (BSG) programme**.

Regional Groups within ITU-T Study Groups have proven effective mechanisms to coordinate regional contributions to ITU and increase the number and quality of technical contributions.<sup>64</sup> ITU-T has 15 regional groups:

- Seven for Africa (Study Groups 2, 3, 5, 12, 11, 13, and 17)
- Three for the Americas (Study Groups 2, 3 and 5)
- Three for the Arab States (Study Groups 2, 3 and 5)
- Two for Asia and the Pacific (Study Groups 3 and 5)

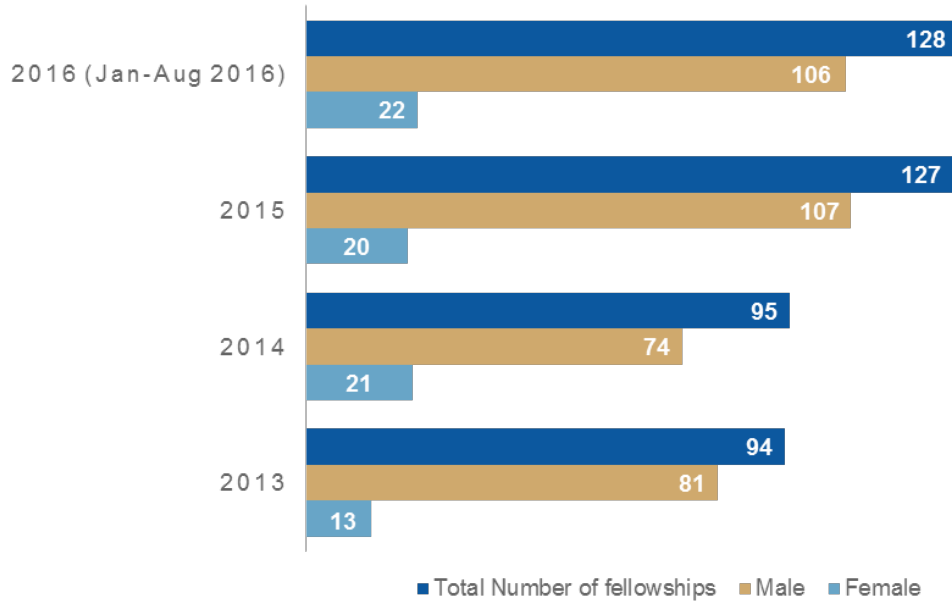
<sup>64</sup> WTS Res. 44; WSIS AL C3, C4, C11; SDG Targets 9.5, 10.6, 17.6

- Two for the Regional Commonwealth in the field of Communications / CIS region (RCC/CIS) (Study Groups 3 and 11).

Fellowships continue to be awarded to delegates from certain eligible countries.

The figure below shows the fellowships awarded during the study period with a breakdown by region and gender. 444 fellowships were awarded to developing and low-income countries over the 2013-2016 study period.<sup>65</sup>

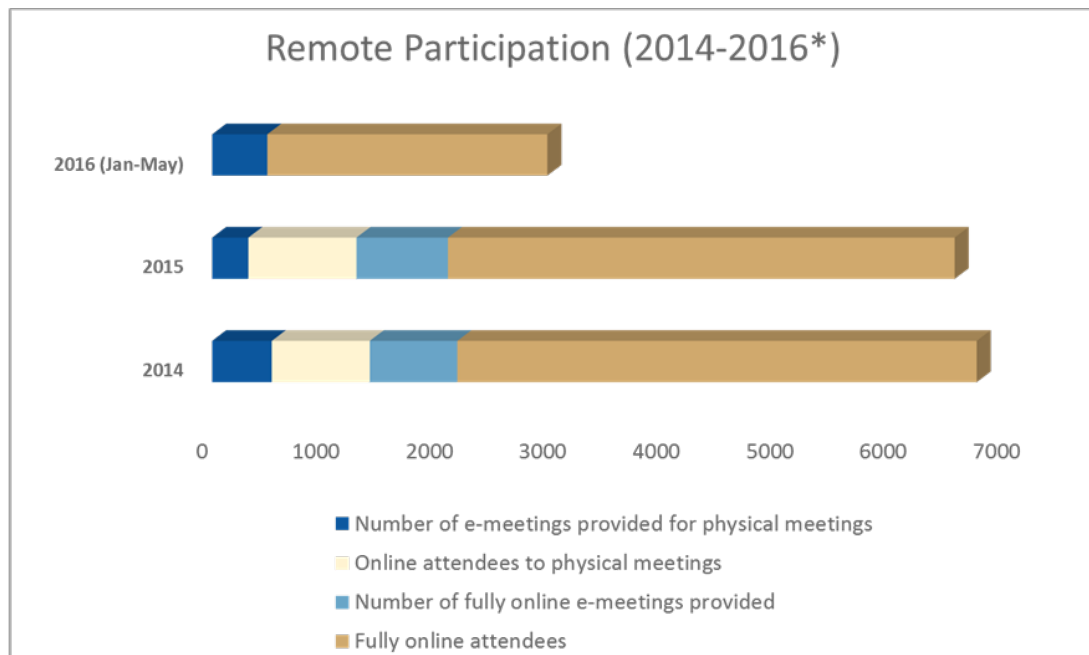
**Fellowships awarded to Developing Country Delegates, 2013 to 2016**  
*Total Number and Distribution by Gender*



TSB continues to improve electronic meeting facilities for the membership, assisting delegates in avoiding costly airfares and hotel expenses. Statistics on e-meetings have been compiled as from 2014 and are indicated below.<sup>66</sup>

<sup>65</sup> WTSa Res. 44; WSIS AL C4; SDG Targets 4.B, 9.5, 10.6, 17.6

<sup>66</sup> WTSa Res. 32; WSIS AL C4; SDG Targets 10.6, 17.6



\*Note: Data available only from 2014 onwards

## 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 assists delegates from developing countries in increasing the value of their participation in ITU-T.

**New ‘hands-on’ training sessions** – offered to ITU-T Study Group participants – focus on the development of practical skills to maximize the effectiveness of developing countries’ participation in the ITU-T standardization process. These training sessions cover topics including strategies for participation in study groups, drafting contributions to meetings, presenting proposals, collaborative working methods and building consensus.<sup>67</sup>

## T.2-3 Outreach and promotion

Open events and symposia in developing countries raise awareness of ITU-T services, and encourage peer-learning and best-practices in standards-based innovation.

**Regional Standardization Forums** held for developing countries or in developing countries provide tutorials on ITU-T working methods, as well as more technically-oriented events covering themes including human exposure to EMF, quality of service, smart water management, international mobile roaming, mobile financial services, digital identity and big data.<sup>68</sup>

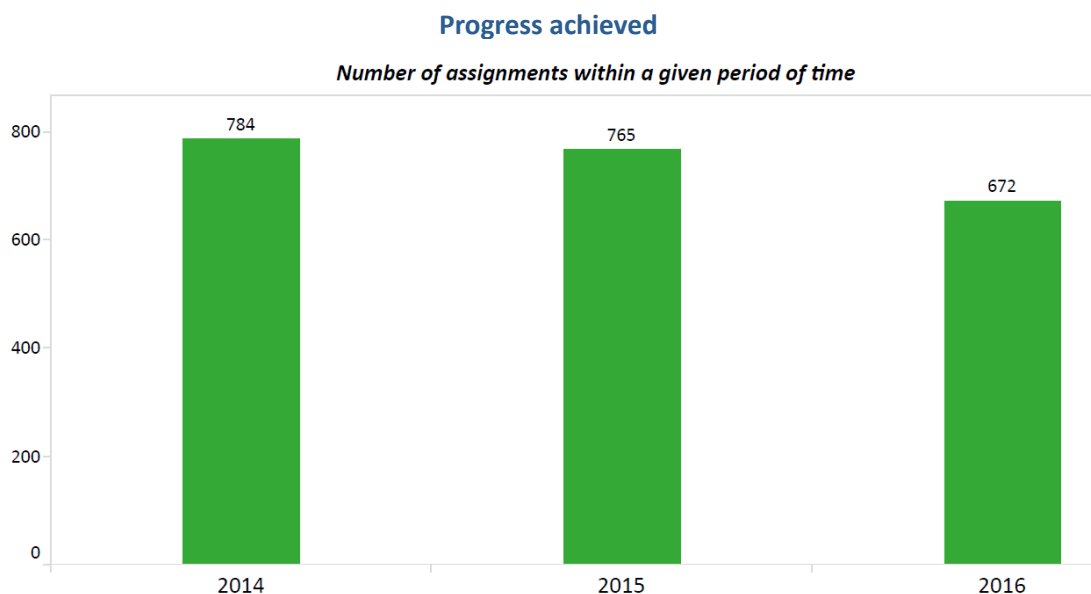
## Objective T.3: Ensure effective allocation and management of international telecommunication numbering, naming, addressing and identification resources in accordance with ITU-T recommendations and procedures

### Outcomes:

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

<sup>67</sup> WTS Res. 18, 44; WSIS AL C4; SDG Targets 9.5, 10.6, 17.6

<sup>68</sup> WTS Res. 18, 44; WSIS AL C4, C11; SDG Targets 9.5, 10.6, 17.6



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 INR database has undergone a major revamp, including the presentation of a more intuitive user interface. The database includes numbers and codes allocated 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 signaling point codes”

ITU members called on TSB to ‘streamline’ the process to report the misuse of INRs to make it as automatic as possible. The reporting mechanism has been redesigned to allow for a more user-friendly interface (available here).<sup>69</sup>

WTSa Res. 91 (Hammamet, 2016) – Enhancing access to electronic repository of information on numbering plans published by ITU-T – calls for ITU-T to enhance the electronic repository of numbering plans, recognizing that this function of ITU-T is essential to the reliability of ICT networks and services.<sup>70</sup>

### 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 update and assignment or reclamation of national numbering/identification resources were received and published in the ITU Operational Bulletin.

WTSa Res. 85 (Hammamet, 2016) Strengthening and diversifying the resources of the ITU Telecommunication Standardization Sector – calls for ITU-T to investigate possible measures to

<sup>69</sup> WTSa Res. 61; WSIS AL C2; SDG Targets 9.1, 9.C

<sup>70</sup> WTSa Res. 91; WSIS AL C2; SDG Targets 9.1, 9.C

generate additional revenue for ITU-T, exploring the potential for revenue generation from international numbering resources and conformance and interoperability testing.

## 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

Over 10,000 pages of ITU-T Recommendations and Supplements are published each year, as well as Technical Papers, Technical Reports, Operational Bulletins and Focus Group deliverables. 2016 saw the production of the most ITU-T standards over the period from year 2000 to 2016.

The ITU-T Focus Group on networking aspects of IMT-2020 (5G) concluded its preliminary study into the networking innovations required to achieve the ambitious performance targets of smart 5G systems. The group's output takes the form of five draft ITU international standards and four draft ITU technical reports to drive related work in ITU-T Study Groups. Read the full press release here.<sup>71</sup>

The ITU-T Focus Group on Digital Financial Services delivered 17 thematic reports and is in the process of finalizing a further 10. The reports support some 80 policy recommendations establishing guiding principles to assist the pursuit of digital financial inclusion at the national level. These reports and recommendations can be found on the Focus Group's homepage. Read the full press release here.<sup>72</sup>

#### T.4-2 Database publications

Among the numerous databases which are continuously enhanced to serve ITU-T delegates and secretariat staff are: ITU-T Recommendations; International Numbering Resources; ITU Product Conformity Database; ITU-T Patents and Software Copyrights; ITU-T Formal descriptions and Object identifiers; ITU-T Test Signals; ITU-T Work Programme; ITU-T Liaison Statements; ITU-T Terms & Definitions

In order to help the ITU-T community to follow up with the latest services and tool enhancements, a new service announcements platform is now available at <http://tsbtech.itu.int/>.

Unique and persistent identifiers based on the Digital Object Architecture (DOA) are now available for items registered in the following ITU-T databases: ITU-T Recommendations; ITU-T Conformity Statements; ITU-T Patents and Software Copyrights; ITU-T Formal descriptions and Object identifiers; ITU-T Test Signals; and ITU-T Liaison Statements. These persistent identifiers will enable new features

<sup>71</sup> WTSR Res. 92; WSIS AL C2; SDG Targets 9.1, 9.C, 17.6

<sup>72</sup> WTSR Res. 89; WSIS AL C2, C3, C4; SDG Targets 1.4, 5.A, 8.10, 9.3, 10.3, 10.5, 10.B, 17.6

such as digital signature-based data integrity checks, role-based information management, data privacy, and other advanced information management capabilities.<sup>73</sup>

### T.4-3 Outreach and promotion

#### Communications on ITU standardization

ITU press releases distribute news on ITU work of particular interest to media. Press releases are distributed with supplemental notes to technical editors in certain cases, a return to past practice valued by media outlets covering standardization. ITU-wide newslog pages are well visited and often spur media attention. The ITU blog (called “itu4u”) was introduced in 2012 to carry bylined ‘opinion’ pieces and TSB/ITU-T remains a highly active contributor of content to this platform. The consistent output of ITU-T news content, coupled with a coordinated social media strategy led by the ITU General Secretariat, continues to see news of ITU-T’s work feature in a variety of mainstream publications. A scoop page highlights a selection of the news coverage of ITU-T.

ITU-T standardization topics receiving the highest levels of worldwide coverage include:

- The ITU-T H.265 “HEVC” video codec
- G.fast broadband access, the implementation of which is the subject of sustained media attention
- The work of the ITU-T Focus Group on IMT-2020 (5G) and ITU-T Focus Group on Digital Financial Services
- NG-PON2 40-Gigabit-capable passive optical networks
- XGS-PON 10-Gigabit-capable symmetric passive optical networks
- OTN Beyond 100G, the 5th edition of Recommendation ITU-T G.709/Y.1331 “Interfaces for the Optical Transport Network”

A new video clip “ITU Standardization – the technical foundations of the information society” was released on 24 May 2016 and has since received over 3000 views. The video was sponsored by NTT and KT (see <http://www.itu.int/en/ITU-T/wtsa16>).

#### CCITT/ITU-T 60th anniversary<sup>74</sup>

2016 marks 60 years since the 1956 establishment of the International Telegraph and Telephone Consultative Committee (CCITT), the precursor to ITU-T, established in 1992. The 60th anniversary of CCITT/ITU-T celebrates the many experts that contribute their time and expertise to the development of the ITU standards that bring cohesion to the unceasing innovation of the ICT community. To celebrate the CCITT/ITU-T 60th Anniversary, a series of talks were held during the WTS-16 Plenary sessions on Wednesday, 26 October, including Talks on Digital Financial Services, and Talks on Artificial Intelligence. On the evening of 26 October a Gala reception was kindly sponsored by UAE (Gold), South Korea (Silver), and Rohde & Schwarz (Bronze).

### T.4-4 ITU Operational Bulletin

Notifications of national numbering/identification plan update and assignment or reclamation of national numbering/identification resources were received and published in the ITU Operational Bulletin, which is published in the six official languages twice a month.<sup>75</sup>

<sup>73</sup> WTS Res. 32; WSIS AL C5; SDG Targets 9.1, 17.6

<sup>74</sup> WSIS AL C11; SDG Target 17.7

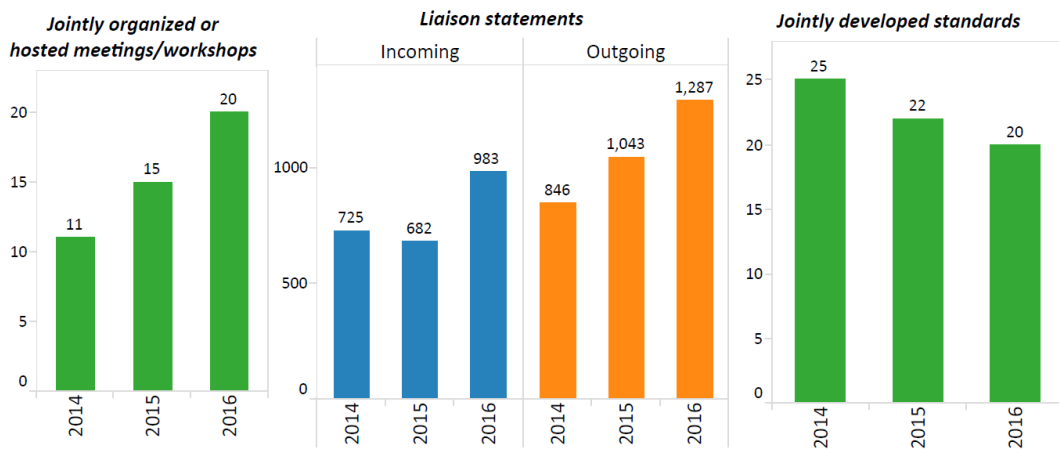
<sup>75</sup> WTS Res. 20; WSIS AL C3, C11; SDG Target 17.6

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

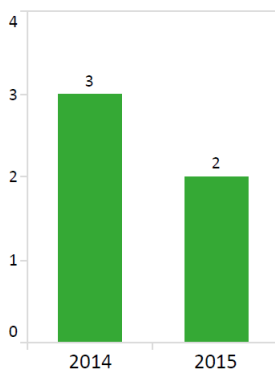
### Outcomes:

- 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

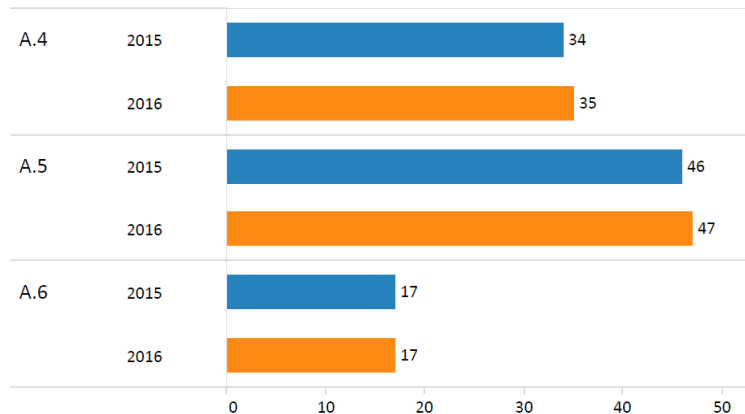
### Progress achieved



### Agreements with other Standards Development Organizations



### ITU-T A.4/5/6 qualifications as from 25.01.2016



### Outputs

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

ITU continues to provide leadership in building cooperation among the many bodies active in ICT standardization.



## **IEC, ISO and ITU**

Some 10 per cent of all ITU standards are common or aligned texts with the ISO/IEC Joint Technical Committee 1 on Information Technology (ISO/IEC JTC1). Highlights of recent collaboration with IEC and ISO include the release of ITU-T H.265 HEVC and two standards fundamental to the cohesion of cloud computing's development.<sup>76</sup>

## **Global Standards Collaboration**

ITU-T continues to engage in many collaborative standardization efforts with other SDOs such as the Global Standards Collaboration (GSC). IoT, 5G, Security and Privacy and SMEs were the focus of the 20th meeting of the Global Standards Collaboration (GSC-20), hosted by TSDSI in New Delhi, India, 26-27 April 2016. GSC-20 welcomed ISO and IEC as new GSC members. ITU hosts the repository of GSC-documents from past meetings.<sup>77</sup>

## **ETSI & ITU**

The ITU-ETSI MoU was reaffirmed in 2016. ETSI and ITU continue to enjoy successful collaboration in particular in the fields of green ICT standards. Topics of shared interest in this arena include, for example, ICT energy efficiency and methodologies to assess the environmental impacts. Standardization for C&I testing is another area supported by strong ETSI-ITU collaboration, with collaborative projects including SIP-IMS conformity testing; Internet-related performance measurement; and a framework for the interconnection of VoLTE/ViLTE-based networks.<sup>78</sup>

## **ITU and Association for Information Systems (AIS)**

AIS is a non-profit professional association for individuals and organizations who lead the research, teaching, practice, and study of information systems worldwide. Both parties will cooperate on technical challenges of ICT ecosystems and infrastructures that would bring greater certainty, confidence, and predictability to interactions within the Information Society.<sup>79</sup>

## **ITU and Georgia Tech Applied Research Corporation (GTARC)**

GTARC is a non-profit supporting organization of the Georgia Tech Research Institute (Georgia Institute of Technology is an ITU academia member). Both parties will raise awareness for IoT standardization. Read the press release here.<sup>80</sup>

## **ITU and IBM Watson AI XPRIZE**

ITU has signed a cooperation agreement with IBM Watson AI XPRIZE, a USD 5 million competition that aims to accelerate the development of scalable Artificial Intelligence (AI) solutions to address humanity's grandest challenges. Read an ITU blog piece on the agreement here. ITU will draw on its global network of ICT experts to propose judges to join the XPRIZE scientific advisory board, in addition assisting in the proposition of datasets, test environments and other resources to aid the research of XPRIZE entrants. ITU also plans to offer mentors and other technical experts to assist entrants in improving their applications and showcasing their work, and this offer of assistance will also extend to the provision of an ecosystem of technical tools and resources.<sup>81</sup>

<sup>76</sup> WTSR Res. 7; WSIS AL C2, C11; SDG Targets 9.1, 17.16, 17.17

<sup>77</sup> WSIS AL C2, C5, C11; SDG Targets 9.5, 9.C, 17.16, 17.17

<sup>78</sup> WSIS AL C7 e-environment, C11; SDG Targets 7.B, 13.B, 17.16, 17.17

<sup>79</sup> WSIS AL C3, C11; SDG Targets 9.C, 17.16, 17.17

<sup>80</sup> WSIS AL C3, C11; SDG Targets 9.C, 17.16, 17.17

<sup>81</sup> WSIS AL C2, C3, C11; SDG Targets 9.1, 9.5, 17.6, 17.8, 17.16

### 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 can be found at: <http://www.itu.int/en/ITU-T/extcoop/Pages/sdo.aspx>.<sup>82</sup>

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

ITU-T organizes a range of events in partnership with other organizations on subjects of mutual interest.

#### Open source and standards for 5G

Workshop on Open Source and Standards for 5G organized by ITU and the NGMN Alliance at Qualcomm Headquarters in San Diego, USA, 25 May 2016.

#### Smart cities

The first World Smart City Forum, organized by IEC in partnership with ISO and ITU, was held in Singapore, 13 July 2016, co-located with the World Cities Summit [www.worldcitysummit.com.sg/](http://www.worldcitysummit.com.sg/) and Singapore International Water Week [www.siww.com.sg](http://www.siww.com.sg). The first **World Smart City online community** was launched in January 2016 in the approach to the Forum. Find the online community here. A Workshop on laying the foundation for Sustainable Development Goals: Role of Smart Sustainable Cities was organized by ITU and UNECE in Geneva, 2 May 2016. A Forum on shaping smarter and more sustainable cities: striving for sustainable development goals was organized by ITU, UNECE, Tecnoborsa, and the Chamber of Commerce of Rome, and hosted by Ministry of Economic Development of Italy in Rome, Italy, 18-19 May 2016.

#### Academia

IEC, ISO, and IEC organize World Standards Cooperation (WSC) Academic events, which aim at discussing the role of academia in the standards-development process. The fourth WSC Academic Day was held in Frankfurt, Germany, on 12 October 2016. The third WSC Academic Roundtable, Engaging academia in standardization for a sustainable future, was organized by ITU-T in Bangkok on 17 November 2016.

#### Intelligent transport systems

ITU/UNECE Symposium on The Future Networked Car held within the Geneva International Motor Show brings together representatives of vehicle manufacturers, the automotive and ICT industries, governments and their regulators to discuss the status and future of vehicle communications and automated driving. The 11th edition of the symposium was held 9 March 2017. Workshop on How Communications will Change Vehicles and Transport was organized by ITU and the Telecommunication Technology Committee (TTC) in Japan 4-5 July 2016. Vehicle Connectivity workshop was organized by ITU and the Telecommunications Industry Association (TIA) in Detroit, US, 29-30 November 2016.

#### SMART cables for climate monitoring

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

<sup>82</sup> WSIS AL C11; SDG Targets 17.6, 17.16

Workshop on SMART Cable Applications in Earthquake and Tsunami Science and Early Warning was organized by ITU, Deutsches GeoForschungsZentrum (GFZ) and the European Plate Observing System (EPOS) in Potsdam, Germany, 3-4 November 2016. 5th workshop on SMART Cable Systems: Latest Developments and Designing the Wet Demonstrator Project was organized by ITU, WMO and UNESCO-IOC in Dubai, United Arab Emirates, 17-18 April 2016.

### **ICT, environment and climate change<sup>83</sup>**

6th ITU Green Standards Week: Shaping Smart Sustainable Cities: Towards Habitat III, 5-9 September 2016, Montevideo, Uruguay, hosted by the Municipality of Montevideo, Uruguay. The 6th ITU Green Standards Week was co-organized with the Inter-American Association of Telecommunication Enterprises (ASITET), the Economic Commission for Latin American and the Caribbean (ECLAC), the Basel Convention Regional Centre for the South American Region (CRBAS) and the Development Bank of Latin America (CAF). Full text of the press release highlighting the event's conclusion with the adoption of the Montevideo Declaration is available [here](#).

Climate Neutral ITU: ITU has continued to reduce its own operational environmental footprint. For the consolidated UN "Greening the Blue Report 2016", pertaining to 2015 final data, ITU's overall worldwide operational footprint was 3.56 tCO<sub>2</sub>e per capita according to UN standard reporting protocols. This is 54% better (lower) than the average for all reporting UN organizations, and places ITU being in the best quintile of the 66 organizations reporting. ITU's net reduction of emissions per capita from 2010 to the latest (2015) data is 7% per annum. ITU is now climate-neutral worldwide and is certified as such by UNFCCC for the reporting year 2015.

### **e-Waste<sup>84</sup>**

From 2015 until October 2016, ITU and the Caribbean Broadcasting Union (CTU) collaborated on an ITU-funded e-Waste project. The objective of the project was the formulation of model policies in the areas of environmental standards, electronic waste management and recycling, focusing in particular on television devices, as well as mobile phones and computers.

In partnership with University of La Plata of Argentina, ITU is developing a project to establish a Pilot Plant that will provide concrete responses to the E-Waste problems in cities in line with the Sustainable Development Goals. This project also seeks to contribute to the implementation of WTDC Resolution 66 (Rev. Dubai, 2014) to provide assistance to developing countries in the use of ICTs to mitigate and address the effects of climate change, taking into account the impact of ICTs on the environment.

Joint UN Workshop on Towards building effective partnerships for sustainable management of e-waste was organized by ITU, the Secretariat of the Basel Convention, ECLAC, UNIDO, WHO, and WIPO in Geneva, 5 May 2016.

### **Cybersecurity**

Workshop on Cybersecurity strategy in African countries was organized by ITU and the African Telecommunication Union (ATU) in Khartoum, Sudan, 26 July 2016.

<sup>83</sup> PP Dec. 5, 13, PP Res. 25, 71, 182, WTDC Res. 1, 5, 30, 66

<sup>84</sup> PP Dec. 5, 13, PP Res. 25, 71, 182, WTDC Res. 1, 5, 30, 66; SDG Targets: 11.6, 12.2, 12.5, 12.6, 12.a

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

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

#### Outcomes:

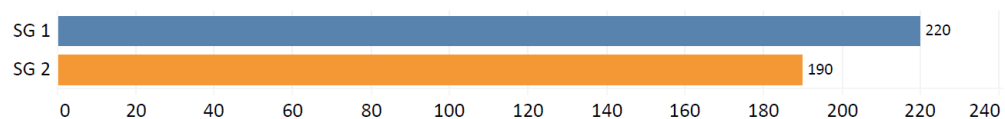
- D.1-1: Draft strategic plan for ITU-D
- D.1-2: WTDC Declaration
- D.1-3: WTDC Action Plan
- D.1-4: Resolutions and recommendations
- D.1-5: New and revised Questions for study groups
- D.1-6: Increased level of agreement on priority areas
- D.1-7: Assessment of the implementation of the Action Plan 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

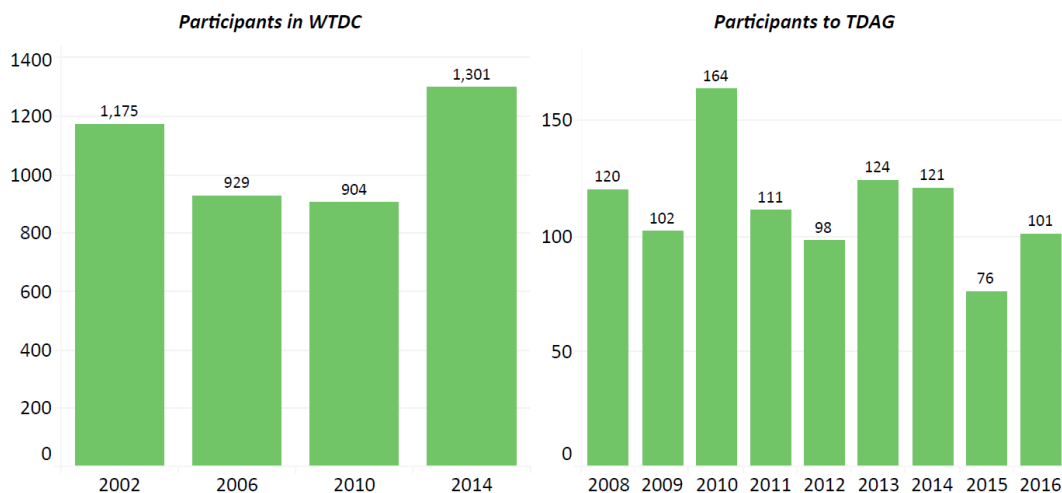
#### Progress achieved

##### Regional Preparatory Meetings 2016

	Participants	Member States or Sector Members from the region represented	Member States or Sector Members from other regions
<b>AFR</b>	147	30	11
<b>CIS</b>	104	9	2

##### Participants to ITU-D Study Groups (2016)





## Outputs

### D.1-1 World Telecommunication Development Conference (WTDC)<sup>85</sup>

The next World Telecommunication Development Conference (WTDC) will take place in Buenos Aires, Argentina, from 9 to 20 October 2017. The preparation of key documents for WTDC-17 has already begun, with efforts under way at the Telecommunication Development Advisory Group (TDAG). At its meeting in March 2016, TDAG reviewed preliminary drafts of three key documents prepared by its Correspondence Group on Strategic Plan, Operational Plan and Declaration, namely: (1) ITU-D Contribution to the ITU Strategic Plan for 2020-2023; (2) ITU-D Action Plan; and (3) WTDC-17 Declaration. The draft agenda of WTDC-17 was approved by the ITU Council 2016 (in Document C16/56) and obtained the concurrence of a majority of the Member States. The website for WTDC-17 has been developed and launched to support the dissemination of information (including circulars, documents, reports, contributions) to Member States and Sector Members in order to facilitate the promotion of the event.

Full details on the preparations of WTDC-17 can be found in document C17/56.

### D.1-2 Regional preparatory meetings (RPMs)<sup>86</sup>

In line with WTDC Resolution 31 (Rev. Hyderabad, 2010), the ITU Telecommunication Development Bureau (BDT) is organizing one RPM per region.

The RPMs started in November 2016 with the organization of the RPM for CIS countries in the Kyrgyz Republic; in December 2016 in Rwanda for Africa. The meetings made full use of the regional offices to facilitate the preparatory process at the regional level. The respective websites for RPMs were developed in July 2016 to support the exchange of information (including circulars, documents, reports, contributions) with Member States and Sector Members in order to facilitate the promotion of the events.

<sup>85</sup> PP Dec. 5, 13; PP Res. 25, 71, 72, 77, 111, 131, 135, 139, 149, 151, 154, 165, 167, 172; WSIS AL C1, C11; SDG Targets 1, 3(3.d), 5, 10, 16 (16.5, 16.6, 16.8), 17 (17.9, 17.16, 17.17, 17.18, 17.19)

<sup>86</sup> PP Dec. 5, 13; PP Res. 25, 71, 111, 135, 140, 165, 167, 172; WSIS AL C1, C11; SDG Targets 1, 3, (3.d), 5, 10, 16 (16.5, 16.6, 16.8), 17 (17.9, 17.16, 17.17, 17.18, 17.19)

### **D.1-3 Telecommunication Development Advisory Group (TDAG)<sup>87</sup>**

The Telecommunications Development Advisory Group (TDAG) provided strategic guidance on key issues related to the fulfilment of the mission, objectives, outputs and expected results of the current work of BDT.

The 21st meeting of TDAG took place from 16 to 18 March 2016 at ITU headquarters in Geneva. At this meeting, TDAG launched the preparations for WTDC-17 as outlined above and reviewed the preparations for WTDC-17, the implementation of the ITU-D Strategic Plan and Operational Plan 2015, the ITU-D four-year rolling Operational Plan 2017-2020, and the ITU-D contribution to the implementation of the WSIS Plan of Action, including the United Nations General Assembly Overall Review and the Sustainable Development Goals. It also considered the working methods, the collaboration with the other Sectors, including a progress report on the Inter-Sector Coordination Team on Issues of Mutual Interest, ITU-D Study Group-related matters, and membership, partnership and innovation-related matters. The 22nd meeting of TDAG will take place 9-12 May 2017.

### **D.1-4 Study groups<sup>88</sup>**

The ITU-D SGs held their second set of Rapporteur Group meetings in April 2016. As a result of the targeted and high quality contributions received for consideration, the eighteen Study Group 1 and 2 Rapporteur Groups progressed well with the drafting of text for their deliverables. The main purpose of these Rapporteur Group meetings was to ensure that good progress is made with the drafting of text for the final deliverables to be presented for approval at the last SG1 and SG2 meetings in from 27 March to 7 April 2017. This 4 January - September 2016 implementation report work included reviewing results from questionnaires and surveys, calls for contributions and assess where additional input is required.

The ITU-D Study Groups held their third and fourth meetings for the 2014-17 study period from 19 to 30 September 2016 and from 27 March to 7 April 2017, respectively.

<sup>87</sup> PP Dec. 5, 13; PP Res. 25, 71, 111, 135, 140, 151, 154, 165, 166, 167, 172; WSIS AL C1, C11; SDG Targets 1, 3, (3.d), 5, 10, 16 (16.5, 16.6, 16.8), 17 (17.9, 17.16, 17.17, 17.18, 17.19)

<sup>88</sup> PP Dec. 5, 13; PP Res. 25, 71, 135, 140, 154, 165, 166, 167, 172, 201; WSIS AL C1, C11; SDG Targets 1(1.b), 3 (3.d), 5, 10, 16 (16.5, 16.6, 16.10), 17 (17.9, 17.16, 17.17, 17.18)

## 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

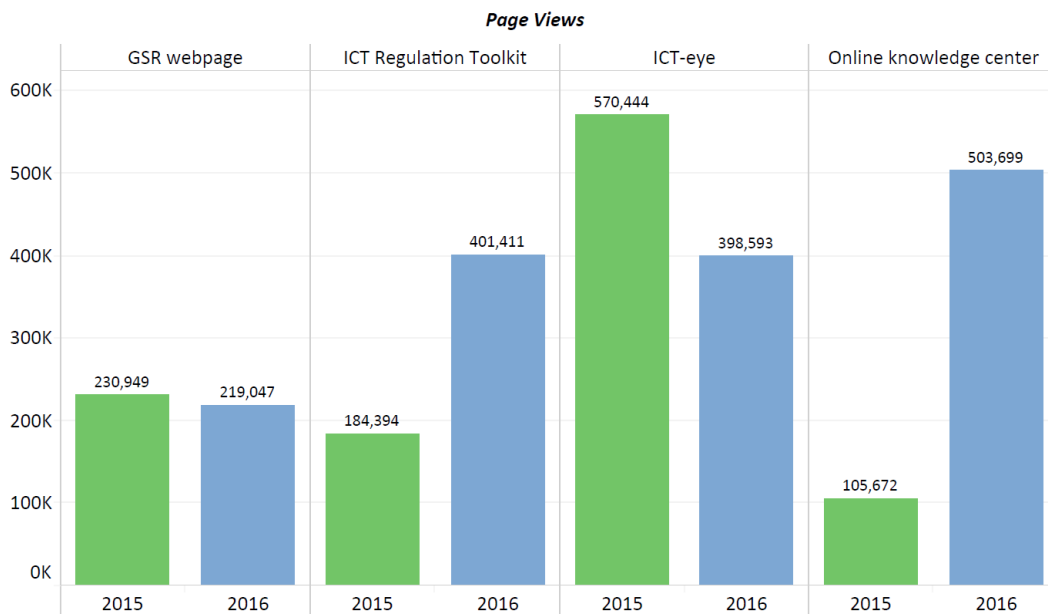
GSR 2016

Member States represented

64

Participants

540



## Outputs

### D.2-1 Policy and regulatory frameworks<sup>89</sup>

This output seeks to achieve 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 an enabling environment for a more inclusive information society through improved decision-making on an effective policy, legal, and regulatory environment for the ICT sector.

ITU-D convenes 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 topical policy, legal, regulatory, as well as on economic and financial issues and market developments.

ITU-D provides data, research, analysis, and tools (Trends reports, GSR discussion papers, publications, portals, databases) to support its membership in defining, elaborating, implementing and reviewing transparent, coherent and forward-looking strategies, policy, legal, and regulatory frameworks.

ITU-D also provides knowledge exchange tools and platforms to enable inclusive dialogue and enhanced cooperation to help countries achieve a more inclusive information society.

ITU-D improved awareness and built capacity through various trainings, workshops, seminars, forums, and conferences focused on ICT development, broadband infrastructure, applications and services, infrastructure development, spectrum management and related issues, satellite coordination, IPv6 implementation, Internet access, conformity and interoperability, and pricing.

ITU-D provided direct assistance to many countries in the fields of Capacity Building in Spectrum Monitoring. ITU-D provided assistance to Palestine on telecommunications/ICTs market review and analysis.

<sup>89</sup> PP Dec. 5, 13, PP Res. 25, 71, 99, 102, 135, 138, 154, 165; WSIS AL C6 of the Geneva Plan of Action and §§ 112-119 of the Tunis Agenda for the Information Society; SDGs: 1 (1.1, 1.2, 1.3, 1.4, 1.5, 1.a, 1.b), 2 (2.3, 2.4, 2.c), 3 (3.8, 3.d), 4 (4.3, 4.4, 4.5, 4.7, 4.c), 5 (5.1, 5.b), 7 (7.a, 7.b), 8 (8.2, 8.3, 8.9, 8.10), 9 (9.1, 9.3, 9.5, 9.a, 9.c), 10 (10.3, 10.c), 11 (target 11.1), 12 (targets 12.8, 12.b), 13 (13.3), 16 (16.6, 16.7, 16.8, 16.10, 16.b), 17 (17.6, 17.8, 17.9, 17.14, 17.16, 17.17)



### **D.2-2 Telecommunication/ICT networks, including conformance and interoperability and bridging the standardization gap<sup>90</sup>**

Infrastructure is central for enabling universal, sustainable, ubiquitous and affordable access to ICTs and services for all.

Conformity with international standards and interoperability, i.e. the ability of equipment from different vendors to successfully communicate between them, can help avoid costly market battles over different technologies.

ITU-D continues to implement and update the ITU Interactive Terrestrial Transmission Maps online. The ITU Interactive Transmission Maps (for broadband backbone optical fiber, microwave links and satellite earth stations as well as submarine cables) have been continuously updated in all regions and made available online. The plan for including IXPs on the ITU Interactive Transmission Maps is ongoing.

A report on the Implementation of Evolving Telecommunication/ICT Infrastructure for Developing Countries: Technical, Economic and Policy Aspects was developed and shared with all participants of the ITU-D Study Groups.

In accordance with WTDC Resolution 47, regional forums and training courses on C&I were conducted in collaboration with TSB and BR, focusing on conformity assessment procedures, type approval testing for mobile terminals, and different C&I testing domains for Africa, Americas, Arab States, Asia-Pacific, and CIS.

Regional integration is increasing along with ICT infrastructure development through assessment studies in the regionsto encourage the establishment of harmonized C&I programmes, notably through the development of Mutual Recognition.

The Spectrum Management System for Developing Countries (SMS4DC) is now in use in over 40 countries, and training on SMS4DC was provided to a significant number of countries.

Guidelines have been prepared to assist countries in the development of their national table of frequency allocations, their national spectrum management assessments, for tendering for their national spectrum monitoring system and developing spectrum fee regimes.

ITU-D assisted Palestine on spectrum-related aspects, including frequency notification and coordination, technical examinations, transition to digital broadcasting, the digital dividend, and the allocation of spectrum and licensing. It also provided 20 schools in remote, rural or underserved areas in Palestine with broadband connectivity and equipment, including teachers' training.

Capacity of ITU members was built on a range of telecommunications/ICT network issues. Direct assistance was provided regarding frequency planning; spectrum management master plans; the transition from analogue to digital terrestrial television broadcasting; and other technical issues.

### **D.2-3 Innovation and partnership<sup>91</sup>**

Innovation has been recognized as a powerful engine to promote development and address socio-economic challenges as well as increase the overall competitiveness of countries, while telecommunications/ICTs have been recognized as a key enabler for fostering innovation in various

<sup>90</sup> PP Dec. 5, 13, PP Res. 25, 71, 99, 101, 123, 176, 177, 178, 203; WSIS AL C2, C3, C7 and C9 of the Geneva Plan of Action and the section "Financial mechanism for meeting the challenges of ICT for development" of the Tunis Agenda for the Information Society; SDG Targets 1 (1.a, 1.4), 4 (4.4, 4.6, 4.a, 4.c), 6 (6.5, 6.a, 6.b), 7 (7.1, 7.b), 8 (8.2, 8.5), 9 (9.1, 9.4, 9.5, 9.a, 9.b, 9.c), 11 (11.1, 11.5, 11.a, 11.b), 17 (17.3, 17.5)

<sup>91</sup> PP Dec. 5, 13; PP Res. 25, 71, 72, 99, 172; WSIS AL 3, 4, 5, 6, and 7 of the Geneva Plan of Action and the section "Financial mechanism for meeting the challenges of ICT for development" of the Tunis Agenda for the Information Society; SDG Targets 1 (1.a; 1.b), 2 (2.a, 2.c), 3, 4 (4.a, 4.b, 4.3, 4.7), 5 (5.b, 5.6), 8 (8.2, 8.3, 8.6, 8.10, 8.b), 9 (9.5, 9.b, 9.c), 10, 11 (11.1, 11.4), 12, 13 (13.3), 16, 17 (17.1, 17.3, 17.9, 17.14, 17.16, 17.17)

cross-sectors especially in a converged ICT eco-system. To contribute to bridging the growing innovation divide, several innovation dialogues noted below have fostered knowledge and built capacity for ICT-centric innovation at national, regional and global levels, e.g.:

-An annual innovation track support during ITU Telecom in 2016, where innovation dialogues were in forum sessions on various challenges facing innovation ecosystems.

-An annual innovation track support during WSIS in 2016, where with Innovation dialogues were organized in on ICT-centric innovation ecosystem.

As a result of extensive consultations and dialogues from various regions and global events, an innovation framework was developed identifying key pillars essential for monitoring, diagnosing, developing and impacting ICT-centric innovation ecosystems.

The framework and methodology for national reviews of ICT-centric innovation ecosystems was the subject of consultation and revision with membership at WSIS 2016 in Geneva with over 75 participants in three sessions.

An ICT-centric innovation country review was conducted for Albania, with over 50 participants from the key stakeholders representing 40 organizations participating through a global innovation project developed and funded by the Republic of Korea.

Innovation tools, processes which allow using ICT innovative driven processes and methods, have been developed for innovation to help scale results, e.g.: an innovation platform (innovation.itu.int portal; a co-creation tool (cocreate.itu.int); and a design-thinking methodology (creativity process), which has been developed around delivery of innovation dialogues, assessment, and development of digital innovation frameworks.

The 6th CRO meeting was conducted as a pre-event of GSR-16 where 20 participants reaffirmed the need for a selected portfolio of agreed proposals to be shared and piloted with interested regulators.

In addition, the Industry Leaders' Debate was held on 14 May 2016, in parallel with the regulators' track during the last day of GSR-16.

The 7th CRO meeting was held in Bangkok, Thailand, on 13 November 2016 as part of the pre-event of ITU Telecom and focused on concrete case studies and project proposals for future elaboration.

Partnerships with academia to promote the development of telecommunications/ICTs, in particular in bringing new technologies and fostering ICT innovation, was and is being fostered, including through the development of studies and platforms for increased engagement with academic members.

## 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

120

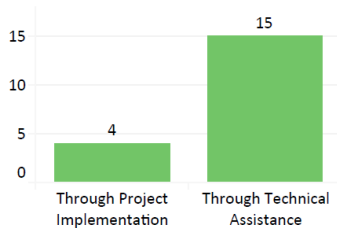
#### Indicators for e-Applications



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

3

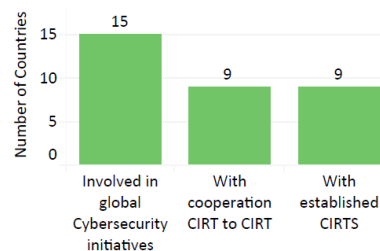
**Countries Assisted in Establishing Cybersecurity-related Capabilities (2016)**



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

37

**Achievements on Cybersecurity-related Areas (2015)**



**e-Health High-level events conducted with WHO and UNESCO**



## Outputs

### D.3-1 Building confidence and security in the use of ICTs<sup>92</sup>

With universal and affordable access to ICTs being recognized as pivotal for bringing the 2030 Sustainable Development Agenda forward, the increased ICT uptake and Internet connectivity will not be sufficient and sustainable if the underlying infrastructure and the devices connected to it are not safe and secure. Member States need to be strategic about cybersecurity where the country's socio-economic vision is aligned with its digital security agenda. The work on the Global Cybersecurity Index (GCI) has resulted in helping countries identify areas for improvement, motivating action to improve cybersecurity, raising the level of cybersecurity worldwide, helping to identify and promote best practices, and has fostered a global culture of cybersecurity.

A government priority programme (GPP) related to the creation of an enabling environment conducive to an effective development of child online safety and security was designed.

In the framework of development of technical skills for Incident Responders, improved capacity and skills of technical staff from 20 government agencies in the area of cyber incidence.

ITU-D provided assistance to Palestine on assessment for the establishment of the Palestinian Computer Incident Response Team (CIRT).

BDT organized several events and trainings of which:

- ITU workshop for the CIS countries on “Integrated Aspects of Infocommunication Cybersecurity”;
- Regional cybersecurity summit and symposium;
- Workshop on CIRT services and set-up process for African countries;
- Third Regional Cyber Security Drill for Africa region to enhance coordination to fight against cyber incidents;
- Regional Cyber Drill ALERT (Applied Learning for Emergency Response Teams) Fourth edition for Arab Region;
- Cybersecurity Week from the Center of the World and Fourth Cyberdrill Applied Learning for Emergency Response Teams for the America Region; and
- Caribbean School Cyber Security Awareness Programme.

BDT provided technical assistance to African and Arab countries: in the development of their respective COP strategic framework; in the implementation of their respective COP Action plans; and on building national cybersecurity strategy.

<sup>92</sup> PP Dec. 5, 13; PP Res. 25, 71, 72, 99, 130, 172, 179, 181; WSIS AL C5; SDG Targets: 1, 3 (3.5), 4 (4.a), 5 (5.2, 5.3, 5.b), 7, 8, 9, 10 (10.2), 11, 16, 17

### D.3-2 ICT applications and services

ICT applications and services are an important demand-side driver that can encourage the adoption of broadband services. There is a need to facilitate the development and use of ICT applications and services that support sustainable development, including in the fields of public administration, business, education and training, health, employment, environment, agriculture, and science within the overall context of national e-strategies. The capacity of ITU Member States to develop national e-strategies to foster an enabling environment for upscaling ICT applications was built through:<sup>93</sup>

For e-Health:

- A High-Level joint ITU–WHO “Digital Health Policy Dialog” which shared experiences and identified strategies among 250 participants..
- Technical Assistance provided to some African countries to develop and validate their national e-Health Strategy.
- A “Toolkit and Implementation Guidelines for a Digital Health Platform” was also developed.

For e-Agriculture:

- A joint ITU–FAO e-Agriculture Strategy Guide was published.
- The Joint ITU–FAO e-Agriculture Solutions Forum, shared e-Agriculture solutions that benefit agriculture stakeholders and established an Experts Group among e-Agriculture solution providers.

For e-Learning:

- A joint UNESCO–ITU “Policy Forum on Mobile Learning” built the capacity of 250 participants on how new, more affordable digital devices can help address urgent educational challenges and meet the needs of students, teachers and administrators.
- A joint ITU–UNESCO Policy Note on Mobile Learning made policy recommendations on the way forward. The Policy Note is available at: [http://www.itu.int/en/ITU-D/Initiatives/m-Powering/Pages/ITU\\_UNESCO\\_MLW\\_PolicyForum.aspx](http://www.itu.int/en/ITU-D/Initiatives/m-Powering/Pages/ITU_UNESCO_MLW_PolicyForum.aspx).
- The capacity of countries to leverage ICT/mobile applications to improve the delivery of value-added services was improved.
- Three different mDiabetes programme were launched in Senegal, India, and Egypt in collaboration between the Ministry of Health and the Ministry of ICT to help diabetic patients.
- Three mSmokingCessation programmes were launched in India, Tunisia, and the Philippines to use mobile applications to assist smokers to quit smoking.
- Guidelines on the use of mobile applications for smoking cessation, diabetes prevention and control, and cervical cancer were developed in collaboration with WHO.

A project on Smart Learning is currently being formulated with the Ministry of ICT and Ministry of Education in Palestine along with interested stakeholders including UNESCO and Alecco.

Awareness was raised among ITU members and advocacy conducted on ICT for development best practices. Specific regional events and trainings were organized, of which:

- Workshop on The Most Popular Mobile Applications: Implementation and Development in the CIS countries

<sup>93</sup> PP Dec. 5, 13; PP Res. 25, 71, 72, 99, 139, 140, 183, 202; WSIS ALC7 of the Geneva Plan of Action; SDG Targets: 2, 3, 4 (4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7), 6, 7, 8 (8.1, 8.3, 8.8), 9 (9.1, 9.b), 11

- Training of Mobile Application development and mobile mediated solutions workshops for instructors
- ITU-TRAI Regional Seminar on Consumer Protection
- Digital Transformation Forum
- ITU Experts Group Meeting on Mobile Identity

**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>94</sup>

Decision-makers need to make sure that the digital divide, which remains a key concern for developing countries, does not also become a knowledge divide. There is a need to provide assistance in human and institutional capacity building that improves skills to support the development and use of ICTs. Thirty-two Centres of excellence were selected and each signed a cooperation agreement with ITU. Steering committees with representatives of the selected institutions were established for each region, to manage the implementation of the CoE strategy.

ITU continued to strengthen capacities in Member States, by developing standardized training material, which were made available through the Centres of Excellence, as well as other cooperating partners from academia.

In May 2016, ITU improved the quality of service and upgraded the ITU academy platform, which has enhanced user experience.

ITU enhanced the dialogue between key stakeholders by organizing the global ICT Capacity Building Symposium (CBS) in Kenya from 6-8 September 2016. The Symposium was preceded by two pre-events, on “Capacity building in Internet Governance” and “Regulators as Enablers and Consumers of Capacity Building” and attracted more than 400 participants.

Specific regional events and trainings were organized of which:

- Train for Trainers for Connected Schools in Kyrgyzstan
- Workshop for the CIS countries dedicated to the International Girls in ICT Day
- Regional Workshop ITU Accessible Americas III: Information and Communication for ALL
- Online indigenous training course
- Annual regional capacity building workshop on Child Online Protection for sub-Saharan African countries
- ITU/ITSO Arab Regional Training on VSAT and Satellite Systems: Broadband Services over Satellite
- ICTP Workshop on New Frontiers in Internet of Things
- Telecom Policy and Regulation Training for Government Officials
- ITU Training Programme on Certified IPv6 Network Engineering- Level 1 (CNE6 Level 1) for Arab LDCs

### D.4-2 Telecommunication/ICT statistics<sup>95</sup>

With the growing recognition of ICTs as a driver for social development and economic growth, and as more and more people join the global information society and high-speed communication

<sup>94</sup> PP Dec. 5, 13; PP Res. 25, 71, 72, 137, 139, 140, 172, 176, 188, 189, 197, 199, 202; WSIS ALC4 of the Geneva Plan of Action and §§ 8, 22, 23a, 26g, 49, 51, 65, 72h, 86, 87, 90c, d, f, 95, 114b of the Tunis Agenda for the Information Society; SDG Targets: 1 (1.b), 2 (2.3), 3 (3.7, 3.b, 3.d), 4 (4.4, 4.7), 5 (5.5, 5.b), 6 (6.a), 8 (8.2), 9 (9.1, 9.b, 9.c), 12 (12.7, 12.8, 12.a, 12.b), 13 (13.2, 13.3, 13.b), 14 (14.a), 16 (16.a), 17 (17.9, 17.18), 18

<sup>95</sup> Telecommunication/ICT statistics are relevant to the monitoring of the implementation of all WSIS AL of the Geneva Plan of Action and are referred to in paragraphs 112-119 of the Tunis Agenda for the Information Society, as well as paragraphs 70 of the Outcome Document of the High-Level Meeting of the General Assembly on the Overall Review of the Implementation of WSIS Outcomes. Telecommunication/ICT statistics are relevant to the monitoring of the implementation of all SDGs and are referred to in paragraphs 48, 57, 74-76, 83 of the 2030 Agenda for Sustainable Development.

networks become an indispensable infrastructure, the tracking and measurement of developments in telecommunications/ICTs remain as relevant as ever.

The main outcomes achieved under this output are: (i) 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; and (ii) 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.

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.

A number of statistical products were released to enhance the information and knowledge of policy-makers and other stakeholders on current telecommunication/ICT trends and developments based on high-quality, internationally comparable statistics: the ICT Facts and Figures 2016; the World Telecommunication/ICT Indicators database 2016; and the Yearbook of Statistics 2016.

ITU's flagship publication, Measuring the Information Society Report, has enhanced the knowledge of policy-makers, investors and business people about current ICT market trends allowing them to take evidence-based decisions and by providing an accurate analysis of telecommunication/ICT development worldwide. The 2016 edition of the Report was released in November 2016 (during WTIS 2016).

By organizing the annual World Telecommunication/ICT Indicators Symposium (WTIS), which is the main global forum to discuss ICT statistics, ITU has enhanced the dialogue between ICT data producers and users and the awareness and capacity of countries to produce telecommunication/ICT statistics.

ITU's activities under this output contributed 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).

Activities under this output also contributed towards the monitoring of international development goals by providing input to the annual Millennium Development Goals (MDGs) indicators report and the MDG gap report concerning ICT developments, as well as the Partnership on Measuring ICT for Development proposal for ICT indicators for the SDG indicators framework.

Increased capacity and skills of producers of ICT statistics to carry out data collections, and produce and analyse international comparable ICT indicators, was achieved through a number of capacity-building activities: a multi-country training workshop for national focal points on ICT Indicators was held from 15-18 March 2016 in Nay Pyi Taw, Myanmar, attended by 35 delegates from Indonesia, Lao PDR, Myanmar, Timor Leste, and Vietnam. Country assistance/training on developing a national ICT indicators and statistical framework was provided to Albania, Angola, Comoros, Gabon, Myanmar, and Pakistan.

#### **D.4-3 Digital inclusion of people with specific needs<sup>96</sup>**

Digital Inclusion means ensuring ICT accessibility and the use of ICTs for the social and economic development of people with specific needs. Despite the expanding deployment of ICT/telecommunication networks, many women and girls, persons with disabilities, youth, children, and Indigenous Peoples people remain excluded from the Information Society. The capacity of

<sup>96</sup> PP Dec. 5, 13; PP Res. 25, 30, 32, 33, 34, 36, 37, 64, 70, 71, 131, 139, 140, 175, 184, 198, 202; WSIS AL C2, C4 and C7 and C8 of the Geneva Plan of Action and § 90 of Tunis Agenda for the Information Society; SDG Targets: 1 (1.2, 1.4, 1.a, 1.b), 4 (4.1, 4.2, 4.3, 4.4, 4.5, 4.a, 4.b), 5 (5.1, 5.5, 5.b, 5.c), 8 (8.2, 8.3, 8.5, 8.6, 8.10, 8.b), 9 (9.c), 10 (10.2, 10.3), 11 (11.2, 11.7, 11.c), 16 (16.b), 17 (17.6, 17.7, 17.8, 17.17)



Member States to develop and implement digital inclusion policies, strategies, and guidelines to ensure telecommunication/ICT accessibility for persons with disabilities was strengthened through the following:

- 161 participants were trained on the Model ICT Accessibility Policy Report at the Rapporteurs Group meeting in 2016.
- Recognizing the importance of public procurement in ensuring that accessible ICTs are widely available to persons with disabilities, BDT developed an extensive set of online training materials on “Public procurement of accessible ICT products and services”, which were delivered in an online training course through the ITU Academy and also during the Accessible Americas III: Information and Communication for ALL carried out in Mexico City, Mexico.
- The Model ICT Accessibility Policy Report is now available in all six official ITU languages to facilitate its use by countries around the globe.
- Guidance was provided in 2016 to the Organismo Supervisor de Inversión Privada en Telecomunicaciones (OSIPTEL).

International Girls in ICT celebrations in Bangkok (28 April), Manila (26 April), and Yogyakarta (28 April) were successful in raising awareness as well as to promote technology-related courses and studies to girls and young women.

In 2016, there were Girls in ICT celebrations in 138 countries, with 66,000 girls participating in 1,900 events. Many organizers provided hands-on workshops to teach coding, mobile app development, and other digital skills. Tanzania used its Universal Access Fund to support mobile app development, pitching contests, and empowering 240,000 girls from 2011 to 2016. More than 66,000 girls participated in 1,900 events in 138 countries in 2016 (with a total of 160 countries since 2011). There were 493,371 Girls in ICT Portal page views in 2016; 117,586 sessions of which 78.5% (92,296) were from new visitors & 39% (45,968) were on mobile devices. The #GirlsInICT hashtag reached 54.3M Twitter accounts in 2016 versus 25.8M in 2015. The average reach of Girls in ICT Facebook page: 864/post in 2016 with a total of 3,539 likes (1,554 new likes in 2016).

The Model ICT Accessibility Policy Report (MIAPR) was made available in the six official languages and an accessible e-book format.

The report “Coding bootcamps, a Strategy for Youth Employment” was released at WSIS and provided to the UN Global Initiative on Decent Jobs for Youth. Training materials were developed and delivered to nearly 50 participants from more than 20 state universities and colleges in the Philippines to support them in the launch of their own bootcamps and promotional films.

Awareness was raised and best practices shared among ITU members through the weekly publication of innovative digital inclusion practices and strategies on the ITU-D Digital Inclusion news log at <http://digitalinclusionnewslog.itu.int/>.

Internet Access Centers were created in Bishkek (Kyrgyz Republic), Chisinau (Republic of Moldova), Minsk (Republic of Belarus), and Yakutsk (Russian Federation).

Direct assistance has been provided to African countries in the organization of Girls in ICT Day celebrations in addition to the organization of an African regional competition and conference.

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

Despite the progress that has been made over the last decades, the number of countries with special needs remains very high. Least developed countries (LDCs), small island developing states (SIDS), and landlocked developing countries (LLDCs) in particular, remain vulnerable and face a number of development challenges that require special attention.

ITU is committed to fulfilling its mandate and striving to reach its commitments under the Istanbul Programme of Action (IPoA) in regard to ICTs for LDCs, the Barbados Plan of Action (BPoA) for SIDS, and the Almaty Plan of Action (APoA) for LLDCs. Each of these plans of action are mainstreamed into the Dubai Action Plan.

ITU has increased the awareness of the importance of ICTs for sustainable development, provided concentrated assistance as well as enhanced capacity to LDCs, LLDCs, and SIDS, in all ICT-related activities, initiatives, programmes, and projects. These activities include market regulatory reforms, emergency telecommunications and disaster response, gender equality, ICT infrastructure and spectrum management, and climate change adaptation. This has resulted in increased awareness and better capacity to deal with topics of mentioned above.<sup>97</sup>

Since WTDC-14, ITU has provided emergency disaster response, strengthened capacity, and improved communications for disaster relief in a total of 15 countries (including developing countries, LDCs, SIDS, and LLDC). It supported countries that were affected by disasters, to re-establish their communication networks in its aftermath, by delivering direct assistance through the provision of equipment and infrastructure damage assessments, and in reconstructing and rehabilitating telecommunication infrastructure.

ITU increased the awareness of the importance of ICTs for development and by integrating ICTs within the larger development debate. ITU contributed references to ICTs in the toolkit developed to mainstream the implementation of the IPoA.

## 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

<sup>97</sup> PP Dec. 5, 13; PP Res. 25, 30, 32, 33, 34, 36, 70, 71, 123, 124, 125, 126, 127, 135, 159, 160, 161, 172, 193, 202; WSIS AL C4 and C7 of the Geneva Plan of Action and §§ 9, 23, 26, 49, 59, 87 and 95 of the Tunis Agenda for the Information Society; SDG Targets: 1 (1.4), 3, 4 (4.3, 4.5, 4.6, 4.a, 4.b), 5 (5.b), 6, 8 (8.5), 9 (9.1, 9.2, 9.5, 9.a, 9.c), 10 (10.2, 10.b), 11 (11.1, 11.2, 11.7), 12 (12.b), 13 (13.b), 14, 15, 16, 17 (17.7, 17.8, 17.9, 17.18)

## Progress achieved

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

Countries represented

70

Participants

500

### Emergency Telecommunications

Countries assisted in  
response to disasters

5

Countries having  
received capacity  
building

9

## Outputs

### D.5-1 ICTs and climate-change adaptation and mitigation<sup>98</sup>

Climate change is one of the key present development challenges the world faces. It is an important concern addressed in the current policy debate, including the Paris Agreement adopted by the climate change conference in December 2015, the Sendai Declaration and Framework for Disaster Risk Reduction 2015-2030, the 2030 Agenda for Sustainable Development. ICTs play an important role in limiting climate change, and reducing and adapting to its effects by providing important and innovative tools. ICTs can curb greenhouse gas (GHG) emissions by providing more efficient equipment and tools, and by delivering innovative services and networks. ITU contributed to the adaptation and mitigation of climate change by setting up clean power generation systems through the “Development of Satellite Communications Capacity and Emergency Communications Solutions for the Pacific Island” Project. This project helped to reduce GHG emissions by setting up solar power-based systems for powering some 20 computer centers, using clean power generation systems.

ITU increased the knowledge of Member States on the use of telecommunications/ICTs for climate change adaptation and the importance of green ICT strategies through workshops, which were carried out in those 15 countries that received ICT equipment and training in the aftermath of disasters.

The ITU Regional Forum on Use of ICTs for Transition to Smart and Sustainable Development for Arab states was successfully organized, with around 120 participants attending the Forum and benefitting from 30 high quality presentations.

A regional workshop on technology to mitigate earthquakes and tsunamis effects and EWBS prototype demonstration on tsunamis emergency alert was organized.

ITU contributed to the development of an environmentally friendly early-warning system by setting up solar-powered sirens and control centres in eastern Uganda.

### D.5-2 Emergency telecommunications

Countries throughout the world are experiencing increased numbers of natural and human-made disasters. Disasters have a devastating impact on human lives, and important negative effects on sustainable development by disrupting the economy and destroying critical infrastructure and services. LDCs, LLDCs, and SIDS are particularly vulnerable to the impact of disasters, since many are not well prepared and lack the capacity to respond.

The critical importance of using telecommunications/ICTs to respond to these devastating phenomena is widely recognized. Because of the role that telecommunications/ICTs play in the phases of a disaster

<sup>98</sup> PP Dec.: 5, 13, PP Res. 25, 71, 172, 182; WSIS AL C7 (e-environment) of the Geneva Action Plan is closely linked to Output D.5.1; SDG Targets: 3 (3.9), 5 (5b), 9, 11 (11b), 13 (13.1, 13.2, 13.3), 14, 15

prediction, detection, mitigation, and relief, it is important to develop disaster telecommunications preparedness plans and strategies, including taking account of the need for resilient and redundant infrastructures and systems as part of disaster risk reduction and early warning.

Because disasters often extend beyond the borders of a Member State, effective disaster management may involve the deployment of efforts by more than one country, in order to prevent the loss of human lives and a regional crisis. ITU has facilitated emergency disaster response, strengthened capacity, and improved communications for disaster relief. It helped 15 Member States that were affected by disasters, to re-establish communication networks in the aftermath of a disaster, by delivering direct assistance through the provision of equipment and infrastructure damage assessments, and in reconstructing and rehabilitating telecommunication infrastructure. During these deployments, more than 350 users were trained in the use of satellite telecommunication equipment, during 15 capacity building workshops.<sup>99</sup>

ITU also organized activities to enhance capacities on emergency communications, climate change, smart sustainable cities, e-waste, and related to National Computer Incident Response Teams (CIRTs).

## 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
EMERGE initiative	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 150	Objective I.1

<sup>99</sup> PP Dec. 5, 13, PP Res. 25, 37, 71, 98, 136, 140, 182, 202; WSIS AL C7; SDGs: 3 (3.9), 5 (5b), 11 (11b), 13 (13.1, 13.2, 13.3), 14, 15

## 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)

### **World Telecommunication and Information Society Day (WTISD)**

In 2016, World Telecommunication and Information Society Day (WTISD-2016) focused on the theme: “ICT entrepreneurship for social impact”, in accordance with Resolution 68 and as endorsed by ITU Council 2015.

ICT entrepreneurs and start-ups and small to medium-sized enterprises (SMEs) have a particularly relevant role in ensuring economic growth in a sustainable and inclusive manner. They are involved in the development of innovative ICT-enabled solutions with a unique potential to make a long-lasting impact in global, regional and national economies and as an important source of new jobs, especially for youth, in the current knowledge economy.

The theme for WTISD-16 is in line with ITU’s work in unlocking the potential of ICTs for young innovators and entrepreneurs, innovative SMEs, start-ups, and technology hubs as drivers of innovative and practical solutions for catalyzing progress in achieving international sustainable development goals, with a focus on SMEs from developing countries.

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

The WSIS Forum 2016 was held from the 2-6 May 2016 at the ITU headquarters in Geneva and attracted more than 1,800 WSIS Stakeholders from more than 150 countries. Several high-level representatives of the wider WSIS stakeholder community attended the Forum with more than 85 ministers and deputies, several ambassadors, CEOs and civil society leaders contributing passionately towards the Forum’s programme. The highlight of the Forum was the Prime Minister of Tonga, who graced the event with his presence. On-site attendance and remote participation increased tremendously during the WSIS Forum 2016.

The WSIS Forum was 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).

The Chairman of the WSIS Forum 2016, Mr Daniel Sepulveda (USA), played a key role in providing high-level guidance for the Forum and its outcomes. At the High-Level Policy Sessions of the High-level Track (HLT), which took place on 3-4 May, high-ranking officials of the WSIS Stakeholder community participated in these moderated policy sessions. They were divided into 16 sessions covering 14 themes, which were based on the Geneva Plan of Action with particular focus on the WSIS Action Lines. The HLT was moderated by facilitators who were nominated by different stakeholder types to represent their respective communities. Building on the open consultation process, more than 150 sessions were held during the WSIS Forum 2016. The overall theme of the Forum was “WSIS Action Lines: Supporting the Implementation of SDGs”. An exhibition space provided the perfect atmosphere to network, learn, and share, and the commitment and dedication of the WSIS stakeholders was evident from the outcomes submitted by the session organizers.

The outcomes were presented on the last day of the Forum and were submitted to the Commission on Science and Technology (CSTD), the UN General Assembly, and ITU Council. Some of the key outcomes are: WSIS Forum 2016: Outcome Document; ; WSIS Action Lines Supporting Implementation of the Sustainable Development Goals (2016); WSIS Forum 2016 and SDG Matrix; WSIS Stocktaking Report 2016; and WSIS Stocktaking Success Stories 2016. WSIS Forum 2016: High Level Track Outcomes and Executive Brief; WSIS Action Lines Supporting Implementation of the Sustainable Development Goals (2016); WSIS Forum 2016 and SDG Matrix; WSIS Stocktaking Report 2016; and WSIS Stocktaking Success Stories 2016.

All relevant documentation and the agenda for the next meeting are updated constantly and are available at [www.wsis.org/forum](http://www.wsis.org/forum). The WSIS-SDG Matrix is available at [www.wsis.org/sdg](http://www.wsis.org/sdg).

## ITU TELECOM

As the global platform for accelerating ICT innovation for social good, ITU Telecom World 2016 brought together governments, corporates and small and medium enterprises (SMEs) from emerging and developed markets around the world. Focusing on the importance of collaboration across the ICT ecosystem to grow the digital economy, and the vital role of SMEs, the event contributed to objective 1.1 in a number of ways.

The event welcomed participants at the highest level including Heads of State, Prime Ministers, Ministers, Regulators, leading representatives of international organizations and UN agencies, and C-level executives from the Host Country and the global ICT industry, including SMEs. The international Exhibition at ITU Telecom World 2016 featured 250 exhibitors from 37 countries demonstrating innovation, talent and investment opportunities including National Pavilions, world famous tech-brands and SMEs.

Under the theme “Collaborating in the Digital Economy,” the Leadership Summit & Forum convened influential stakeholders from across the ICT industry and governments, to discuss topics such as how to best reach the digitally disenfranchised, tackling cybersecurity or questioning the integrity of data. Forum discussions explored key technologies such as 5G, or AI and key areas such as digital financial inclusion, accelerating growth or opening new markets. Other forum highlights included B2G and B2B dialogues and a Ministerial Roundtable.

This event was a platform for ITU, its membership and partners, all of whom were heavily involved throughout the event, from helping develop and curate the Leadership Summit and Forum programme, to the ITU-T Standards for Global ICTs Thematic Pavilion, and a series of important co-hosted events, enabling debate on important global issues.

ITU Telecom World 2016 also acted as a global platform, enabling a significant number of important agreements between to be concluded. Targeted networking opportunities throughout also helped enhance international dialogue and increase collaboration among stakeholders. The ITU Telecom World Awards programme recognized excellence and innovation in ICT solutions with social impact.

ITU Telecom World 2017 will take place from 25-28 September 2017, in Busan, Republic of Korea, and will focus on smart digital transformation.

A full report on ITU Telecom World events is available in document C17/19.

## Broadband Commission for Sustainable Development

The Broadband Commission met three times in 2016, meetings comprised: a Special Session of the Commission at Davos in January; a meeting hosted in conjunction with the Global Education & Skills Forum (GESF) by the Sunny Varkey Foundation in Dubai, UAE, in March; and the Commission’s annual meeting in New York in September, ahead of UN GA week.

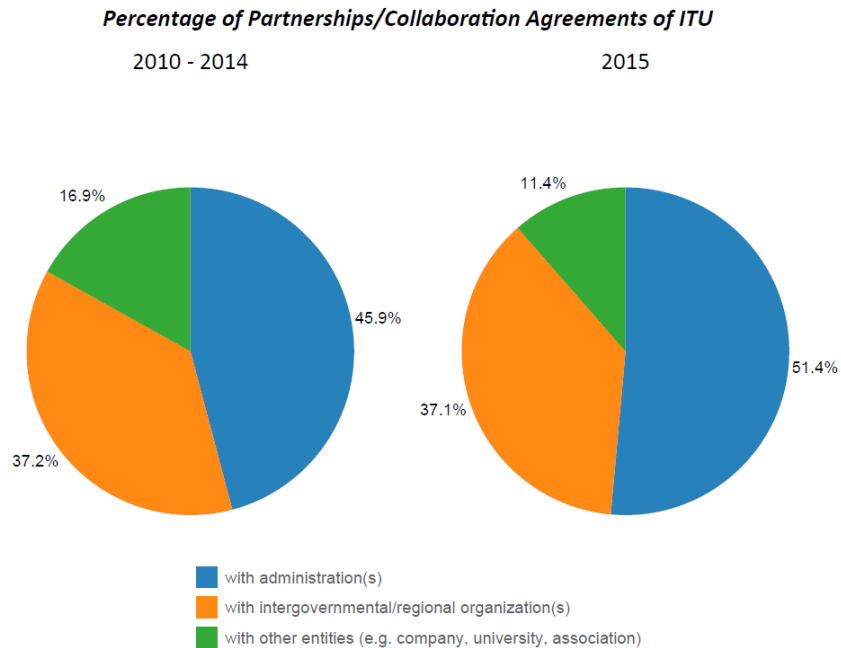
In 2016, the Commission published a number of reports, including its annual State of Broadband 2016 report, which is now widely referenced; the report by the Working Group on Demand; and the report of the Working Group on Health for publication at Mobile World Congress (MWC) 2016. ITU prepared an estimate of the investment needed to connect the next 1.5 billion people by 2020 to achieve the Connect 2020 goals (USD 450 billion dollars), which was published at the Commission’s Special Session in Davos and is available from the Commission’s website: [www.broadbandcommission.org/Documents/publications/davos-discussion-paper-jan2016.pdf](http://www.broadbandcommission.org/Documents/publications/davos-discussion-paper-jan2016.pdf). The Commission continues to engage in a number of outreach activities, and has a social media presence.

## 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)

Throughout 2016 ITU has continued to support technological small and medium enterprises (tech SMEs) through partnerships and platforms like the EMERGE initiative or ITU Telecom World. This work is aligned with the Innovation and Partnership Goal of the ITU Strategic Plan for 2016-2019 and the Connect 2020 Agenda, and seeks to increase ITU's interaction and positioning with regards to tech startup and SME communities. Through this work ITU produced the following outputs in 2016:

- New publication "A review of Micro, Small and Medium Enterprises in the ICT Sector", produced in collaboration with the members of the EMERGE initiative. This publication explored the role of SMEs in the ICT sector, and made a number of recommendations for ITU and Membership to increase the impact of their work in this area;
- New Publication "Trends in tech SMEs and startups support". This publication documented the initiatives undertaken by ministries of ICTs in support of tech SMEs, introducing a number of country experiences from around the world;
- ITU Telecom World 2016: The event is gradually becoming a platform to showcase the entrepreneurial and innovation ecosystems of ITU members. In 2016 the event mobilized close to 100 tech SMEs joined through national pavilions or individual stands, as well as over 20 national and private sector pavilions showcasing innovations in the ICT sector.



Further information on ITU's activities in support of tech SME is available at [www.itu.int/entrepreneurship](http://www.itu.int/entrepreneurship).

### Cybersecurity

A separate report to Council (C17/18) summarizes ITU's activities since Council 2016 in relation to Plenipotentiary 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).

### EMERGE initiative

In October 2015, ITU launched the EMERGE Partnership, a network of stakeholders working to support tech SMEs in emerging markets. The partnership is aligned with the Innovation and Partnership Goal of the ITU Strategic Plan for 2016-2019 and the Connect 2020 Agenda, and seeks to increase ITU's interaction and positioning with regards to tech startup and SME communities.

Partners from the network were mobilized to support the following key activities in 2016:

- Emerge Publication: partners and thought-leaders from the network were mobilized to provide inputs to the Emerge Publication which explored the role of SMEs in the ICT sector, and made a number of recommendations for ITU and Membership to increase the impact of their work in this area.
- WTISD 2016: speakers and participants were mobilized through the network to support to the overall theme of the day: ICT Entrepreneurship for Social Impact;
- ITU Telecom World: the Network was mobilized to provide jury members for the ITU Telecom Awards, as speakers for the Telecom Forum, and to support the dedicated networking activities in the form of the SME dialogues hosted during the event.

Furthermore, ITU representatives were actively involved in the following SME-related events to increase the positioning of ITU with tech SME communities: Seedstars World, an emerging market startup event hosted at EPFL in Lausanne, Switzerland; Pioneers Festival, an international startup event in Vienna, Austria; and Startup Europe Summit, a European Commission startup event in Berlin, Germany.

### Internet Issues

A separate report to the Council (C17/33) summarizes ITU's activities since Council 2016 related to Plenipotentiary Resolutions 101, 102, 133, and 180. 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) the annual Internet Governance Forum (IGF).

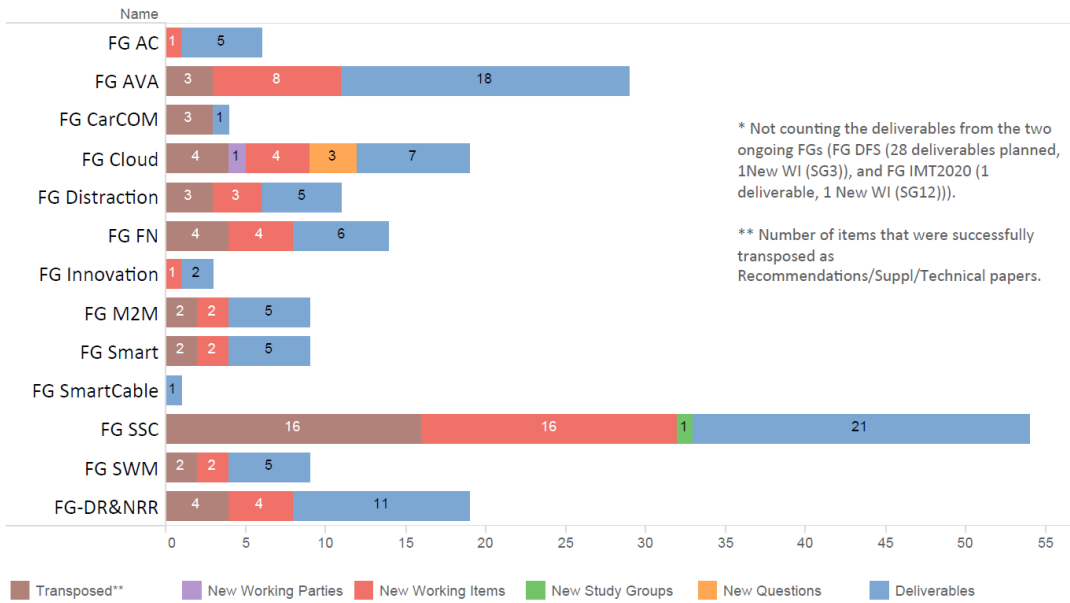
## Objective I.3: Enhance identification and analysis of emerging trends in the telecommunication/ICT environment

### Outputs:

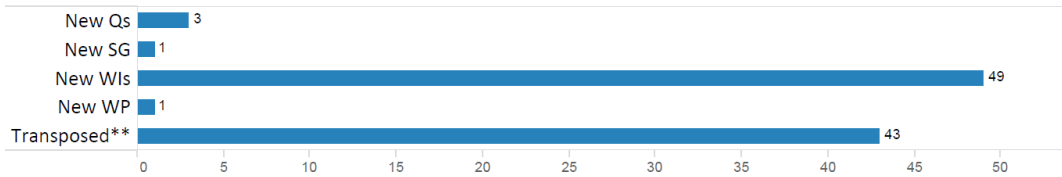
I.3-1 Intersectoral initiatives and reports on emerging telecommunication/ICT trends and other similar initiatives (including ITU News)

## Progress achieved

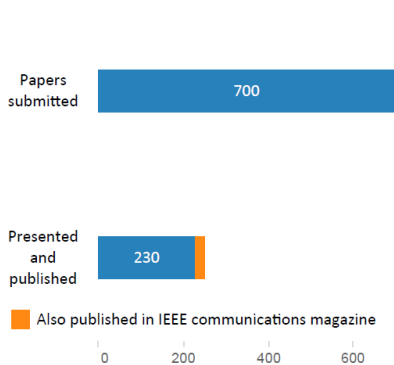
Results of ITU-T Focus Groups since 2010(\*)



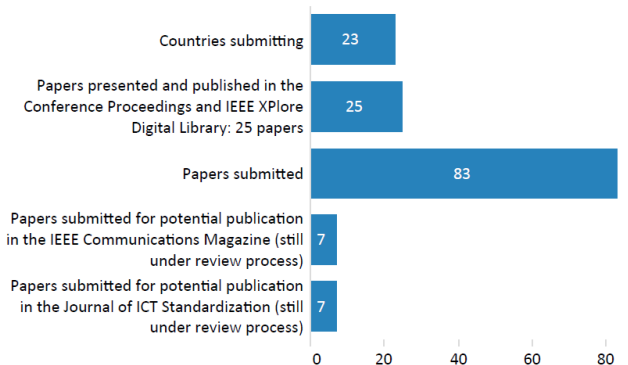
Total Results of ITU-T Focus Groups since 2010(\*)



Contributions to Kaleidoscope events 2008-2015



Contributions to Kaleidoscope events 2016



## Outputs

### I.3-1 Intersectoral initiatives and reports on emerging telecommunication/ICT trends and other similar initiatives (including ITU News)

The timely identification and study of technology, policy and regulatory, social, and economic aspects of emerging telecommunication/ICT trends is underway through several initiatives in all three Sectors and General Secretariat. More details are available in the various sections relevant to each Sector, as well as on the ITU website. The intersectoral group on Emerging ICT Trends continued to meet regularly and discussed emerging topics, including big data, cybersecurity trends, Artificial Intelligence, annual ICT forecasts, and other subjects.

In November 2016, the High Level Economic and Industry Expert Roundtable was co-organized with UN Economic and Social Commission for Asia and the Pacific (UN ESCAP) at ITU Telecom World in Bangkok, Thailand. The meeting exchanged views and analyses on how best to accelerate the connection of the remaining unconnected. The report of Economic and Industry Expert Roundtable served as an input to the Broadband Commission Special Session at the World Economic Forum, in Davos, in January 2017.

ITU launched a new series of Briefings to Permanent Missions in Geneva and also in New York, taking into account the result of a Survey on *ITU, ICTs and Emerging Trends*, conducted through April and May 2016. The first ITU Briefing on Emerging ICT Trends was held at the ITU HQ in Geneva in November 2016 and provided an overview of the emerging trends, challenges and opportunities relating to 5G, followed by a Briefing to Missions in New York on the Role of ICTs in accelerating the achievement of SDGs, held at the UN HQ in New York, in January 2017.

ITU News – full digital transition and new digital products:

ITU News no longer means a printed magazine but a full suite of digital products with massively scaled up distribution, ability to measure impact (including topics of interest to our readership based on user behaviour) and much-improved marketing of our events blended with weekly mentions in the weekly e-letter as well as new rapid-response products released one week after key events. ITU News Magazine was revamped into a dedicated digital product, with email delivery to 80,000+ recipients, compared to mailing print editions to less than 3,000. A new 'ITU News Plus' branded reports – was launched including the "Snapshot Report," which is a very visual, condensed recap report that gives a "snap shot" of a recent, key ITU event. These are short, rapid-response reports, for publication one week after an event. (See WTSa Snapshot Report, for example).

Additionally, the weekly ITU Newsletter was launched. This newsletter – which matches the redesigned magazine for a modern look that ties together the expanding range of ITU News products – contains key ICT trends and insights and is distributed to more than 80,000 inboxes through the CRM system. Along with an increased timeliness and relevance of ITU, the newsletter also offers an increased ability to promote ITU initiatives in context, which is crucial for maximum impact.

Regarding the ITU Blog, there has been a massive increase in traffic, which is a major push for more frequent, timely, relevant high-quality, and consistent content. A 60+ % year-on-year increase to ITU Blog traffic was noted, as well as very low unsubscribe rates (.02%) for the ITU Newsletter (this is very low, particularly for sending to a new mailing list). An even lower unsubscribe rates (.004%) for the ITU News Magazine was noted, and the top performing post for 2016 was "The foundation of India's digital payments platform".

The key takeaways from ITU News activity in 2016 are as follows:

- Frequency, timeliness, and relevance to broader discussion of ICT trends outside ITU drives results in the form of massive increase in traffic.
- Delivering content to readers matters – sending content to Inboxes (Newsletter and Magazine)
- Better design and more customized content – building out in 2017 will maintain growth
- Resource constraints and digital talent gaps hinder growth potential
- In December 2016 alone, there were 120 new subscribers to the weekly ITU Newsletter and the ITU News Magazine, consisting of an impressive array of leaders (25% director or C-Suite level; 65% private sector with healthy growth; and from 60+ countries).

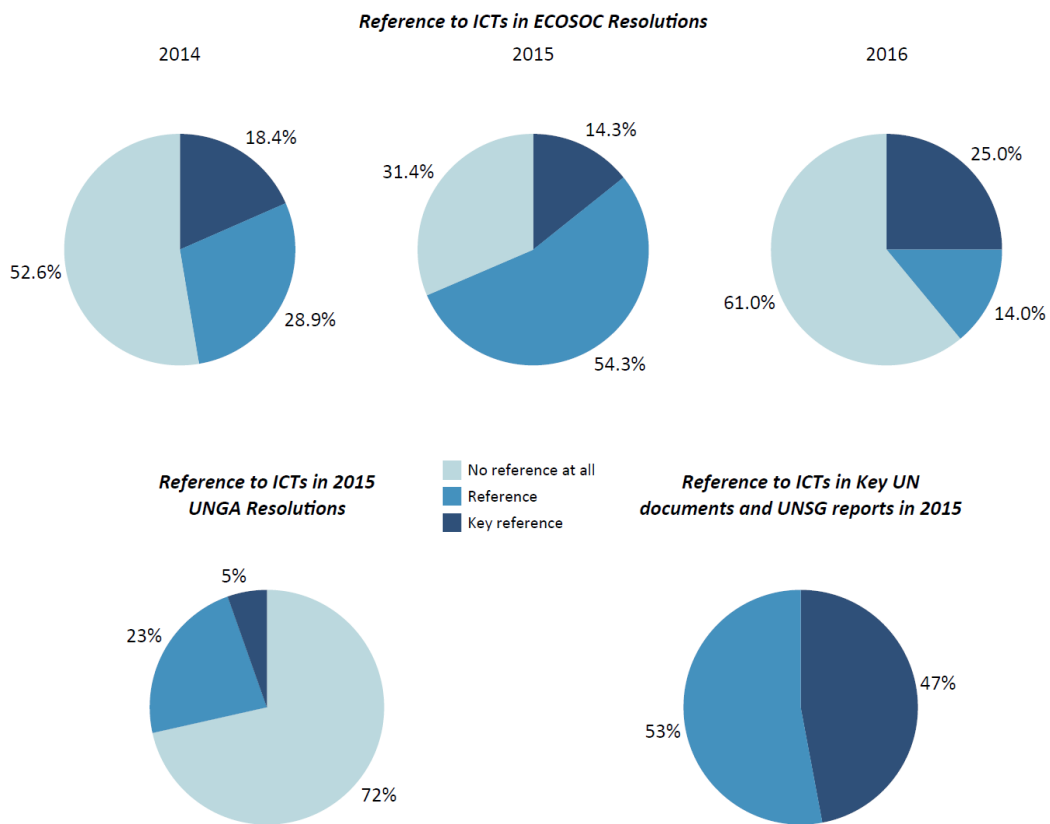
## Objective I.4: Enhance/promote recognition of (the importance of) the telecommunications/ ICTs as a key enabler of social, economic and environmentally sustainable development

### 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

#### Recognition of telecommunications/ICTs at the UN level as key enablers of sustainable development



### Outputs

#### I.4-1 Reports and other inputs to UN inter-agency, multilateral and inter-governmental processes

##### ITU and the United Nations

2016 was a ground-breaking year for the United Nations with the coming into effect, on the first of January, of the newly adopted 2030 Agenda for Sustainable Development, comprising the 17 Sustainable Development Goals and 169 targets, and the launching of the first global follow-up and review process of the SDGs during the High Level Political Forum (HLPF) and related mechanisms and forums under the auspices of the Economic and Social Council (ECOSOC). ITU actively participated in the follow-up and review process, leading to and including the HLPF.

ITU's work with the United Nations during this period was also driven by the Union's participation in and contributions to other major conferences, summits, and high-level meetings, including: The World Humanitarian Summit; High-Level Midterm Review of the Implementation of the Istanbul Programme of Action for the Least Developed Countries for the Decade 2011-2020; Habitat III; COP 22; and the 11th Annual Internet Governance Forum.

During 2016, ITU continued to make all possible efforts to include the work of ITU in relevant General Assembly, ECOSOC, and CSTD resolutions and to a number of UN Secretary-General's annual reports presented to these bodies.

In terms of inter-agency coordination, ITU's visibility and leadership within the Chief Executives Board for Coordination (CEB) and its three pillars (High Level Committee on Programmes (HLCP), the High Level Committee on Management (HLCM) and the United Nations Development Group (UNDG) remained strong. ITU is also called to play a relevant role in the United Nations Inter-Agency Task Team of the Technology Facilitation Mechanism established by the Addis Ababa Action Agenda and part of the Means of Implementation of the 2030 Sustainable Development Agenda and the Partnership on Measuring ICT for Development, among other inter-agency coordination mechanisms (such as those on youth and gender).

Furthermore, ITU also works closely with UN Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States, and the UN Office of the Special Adviser on Africa to bring the potential of ICTs/broadband for sustainable development. As member of the UN Inter-Agency Group of the LDCs, ITU contributed to the toolkit for mainstreaming the Istanbul Program of Action, which is a monitoring and living document. ITU has also participated in the consultations for the establishment of the Technology Bank for the full implementation of the Istanbul Plan of Action for LDCs.

For more details see document C17/INF/10.

### **Climate Change**

For reporting on ITU's activities related to climate change, see sections R.2-1, T.1-5, T.5-3, D.1-4, D.4-1, D.4-4, D.5-1, and D.5-2.

### **Smart Sustainable Cities**

For reporting on ITU's activities related to smart sustainable cities, see sections T.1-5, T.5-3, and D.5-2.

### **E-waste**

For reporting on ITU's activities related to e-waste, see sections T.1-4, T.1-5, T.5-2, D.4-1, D.5-1, and D.5-2.

### **Emergency Telecommunications**

For reporting on ITU's emergency telecommunications-related activities and activities related to disaster prediction, detection, mitigation and relief in 2016, see sections R.2-1, T.5-3, and D.5-2.

### **Gender**

Work on gender-related issues includes the implementation of an ITU's Gender Equality and Mainstreaming Policy. More details can be found in C17/6. One of the key initiatives in 2016 was the EQUALS, a joint ITU-UN Women initiative, with partners hailing from both the public and private sectors, this Global Partnership is dedicated to women and girls in technology and aims to harness the power of modern ICTs to promote gender equality in the digital technology revolution. ITU has also organized the 2016 International girls in ICT day and has granted the 2016 GENDEREM-TECH Awards to "Aliadas en Cadena", "WAAW Foundation", and "The World Wide Web Foundation".

## Empowerment of Youth through ICTs

In 2016, ITU advanced its work in the implementation of Resolution 198 (Busan, 2014), which establishes ITU’s mandate in the area of empowering of youth through telecommunication/ICT. The implementation of Resolution 198 followed the lines of action indicated in the roadmap for 2016-2018 established by Council Resolution 1374, covering areas such as strengthening work with academia, promoting participation of young professionals in ITU meetings and governing bodies, strengthening ITU’s work in the area of young innovators and entrepreneurs, and ensuring ITU-wide coordination in the area of youth.

Some examples of activities conducted by ITU during this reporting period include: the Child Online Programme, the 2016 Young Policy Leaders Programme (held during the 2016 session of Council) or the 2016 Girls in ICT campaign.

For 2017, it is planned that ITU will advance its work in the implementation of the youth roadmap, putting special emphasis on maximizing the synergies with other UN- and ITU-related initiatives and programmes to ensure the provision of youth with the necessary skills for (online) employment, including the Child Online Protection Initiative and the Girls in ICT global campaign, among others. Further information about ITU’s activities on youth is available at <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

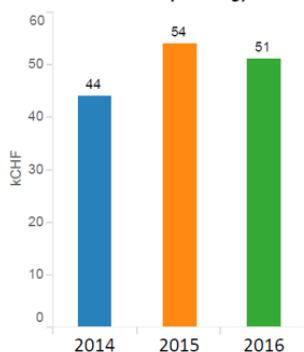
### Progress achieved

*Surveyed Countries having established a regulatory framework to ensure ICT accessibility for persons with disabilities*

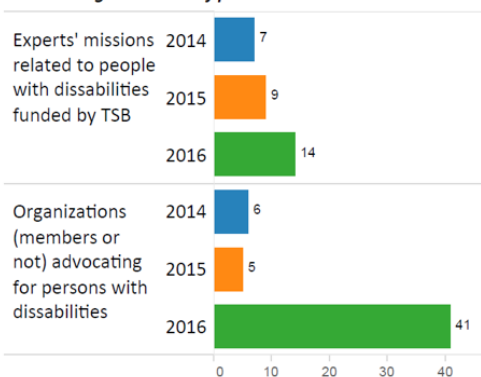
**48**

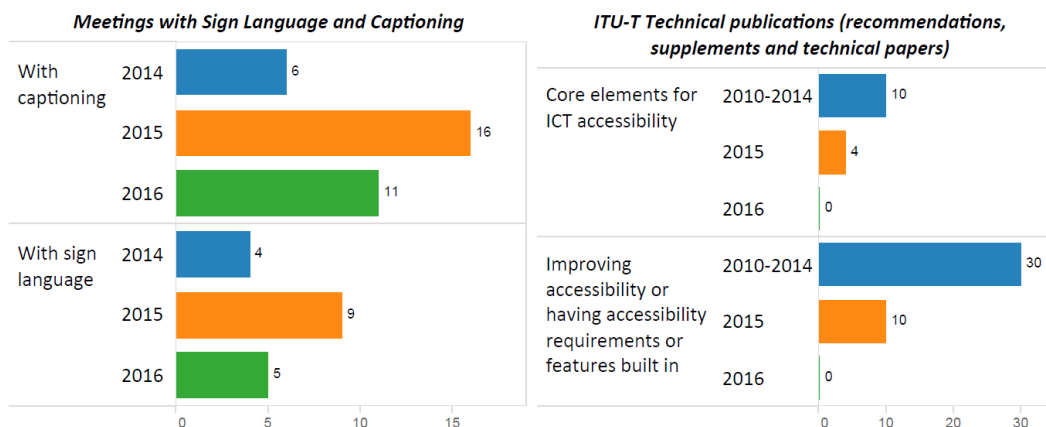
Responses to Survey: 64 countries (ie. 33% of ITU Member States)

*ITU-T's Funds for Accessibility (Sign Language interpretation, Expert travel and captioning)*



*Participation of experts and organizations of persons with disabilities*





## 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**

In 2016 ITU advanced in the implementation of Resolution 175 (Rev Busan, 2014) through activities such as the Intersector Rapporteur Group Audiovisual Media Accessibility (IRG-AVA), ITU-R study group 6 (SG6), ITU-T Study Group 2 (Operational aspects), ITU-T Study Group 16 (Multimedia), ITU-D Study Group 1 (Question 7/1), or the Joint Coordination Activity on Accessibility and Human Factors (JCA-AHF), among others. In addition to these study groups, ITU implemented other activities, like the 3rd IPTV App Challenge, and supported a broad number of projects through most of the regional offices, such as the establishment of a Regional Center for ICT for Persons with Disabilities in the Arab Region, or the launch of a project for the creation of Internet Access and Training Centre for PwDs in the CIS region, among others.

During 2016 ITU continued its advocacy and capacity building work concerning the role that ICTs play to promote the independent living of persons with disabilities. Such advocacy work took place in events organized by ITU, like the Open Consultation of ITU’s Council Working Group on international Internet-related public policy issues (CWG-Internet), WSIS Forum 2016 (session on the role of public procurement in ensuring accessible ICTs for PwD), the Accessible Americas III event, as well as an important number of workshops, seminars, and meetings organized by most ITU regional offices. ITU also joined a number of international meetings related with the social inclusion of persons with disabilities, like the meetings related with the implementation of the UN Convention on the Rights of Persons Disabilities (CRPD), the 2016 Zero Project Conference, the 2016 m-Enabling summit, the 2016 IPC Inclusion Summit (organized in the context of the 2016 Rio Paralympics Games), the 2016 Asia Pacific Economic Cooperation Telecommunications and Information Working Group (APEC-TEL) Seminar on “Social inclusion of people with disabilities through access to telecommunications/ICTs”, the 2016 European Foundation Forum for Inclusion or the 2016 Social Forum of the Human Rights Council, among others.

Looking into 2017, an important part of ITU’s work in the area of accessibility will be to monitor the implementation of the new accessibility target of the Connect 2020 agenda (target 2.5B<sup>100</sup>) which establishes that by 2020 all countries should introduce enabling environments ensuring accessible telecommunication/ICT for persons with disabilities. The publication of the ITU-T Model

<sup>100</sup> Target 2.5.B: Enabling environments ensuring accessible telecommunication/ICT for persons with disabilities should be established in all countries by 2020

ICT Accessibility Policy Report is an important tool to support the implementation of this target. For further information on these activities please refer to the section of this report dedicated to the work of ITU-D under Output 4.3.

Finally, ITU continued working in improving the accessibility of the services that it provides to staff, delegates and the general public. An example of this was the provision of captioning services in ITU's main events, such as the 2016 Session of Council, WTISD-16, or ITU Telecom World 2016, among others, as well as the deployment of the new publication system which improves the accessibility of the documents produced by ITU.

A key instrument to support these activities is the ITU Accessibility Fund, established in 2010 by Resolution 175 (Rev. Busan, 2014). Since its establishment the Fund has supported different types of activities, which include the organization of an app competition in the Americas region, the organization of training and awareness sessions, the support to the implementation of model ICT accessibility policy, or providing funding to support the participation of experts with disabilities in selected ITU meetings. ITU membership is invited to make further voluntary contributions to the fund to support ITU's work in the area of ICT accessibility.

Further information about ITU's activities in accessibility is available at [www.itu.int/accessibility](http://www.itu.int/accessibility).

## 7 Enablers of the Activities of the Union

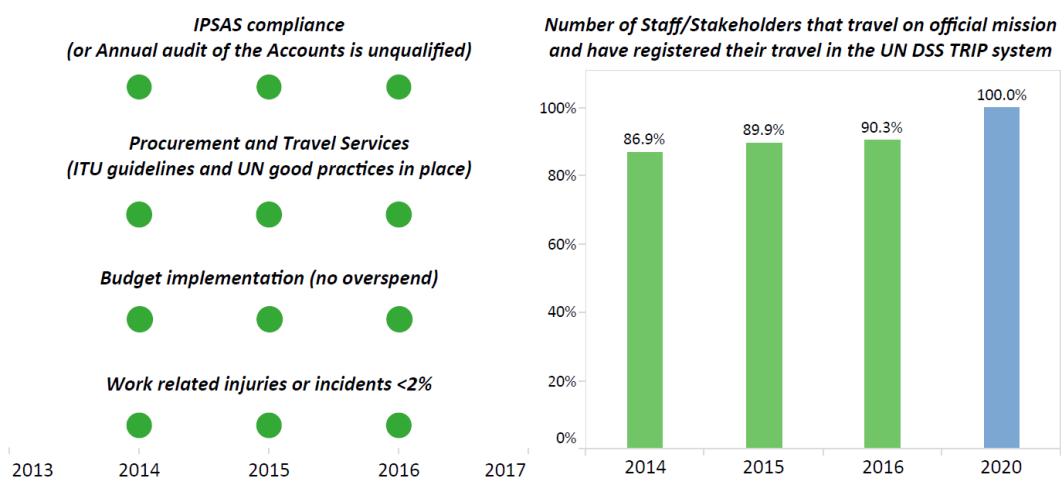
This section will report on progress of Enablers and Support Services provided by the General Secretariat.

### 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:

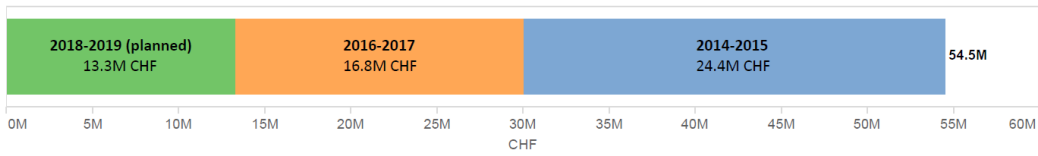
E.1: Efficient and effective use of human, financial and capital resources, as well as a work-conducive, safe and secure working environment

#### Progress achieved

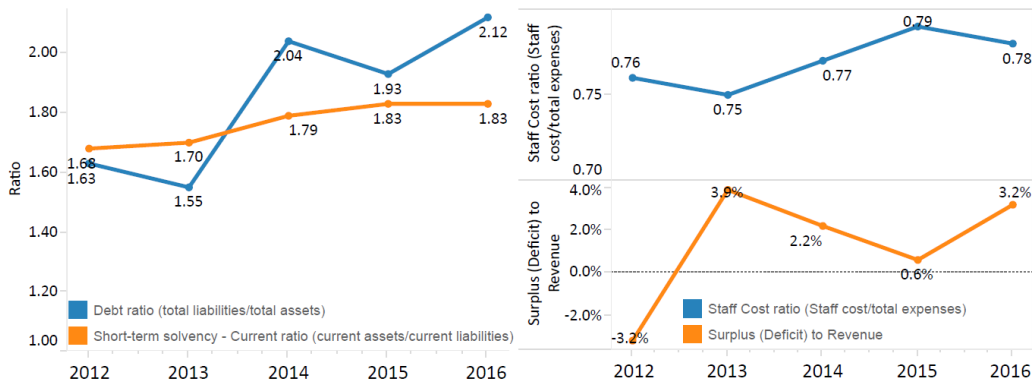




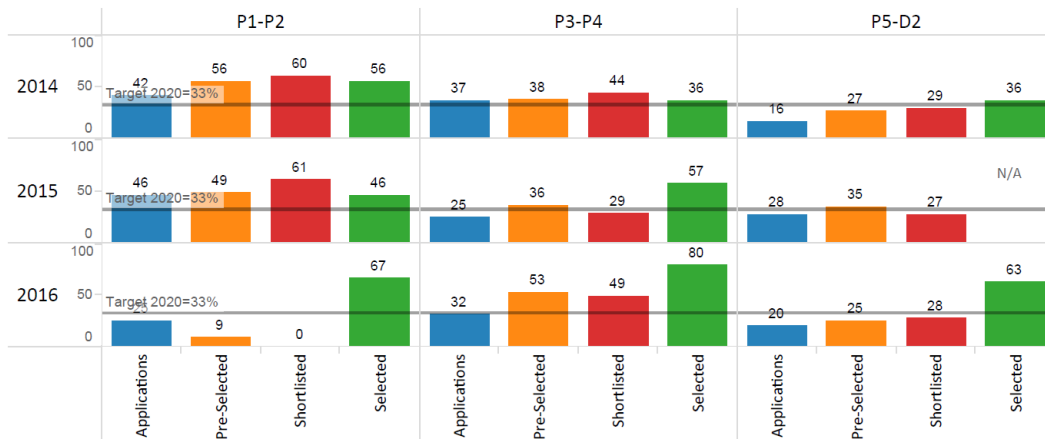
**Cost Savings from Efficiency Measures Implemented**



**Key Financial Indicators**



**Ratio of female professionals retained at each stage of the recruitment process**



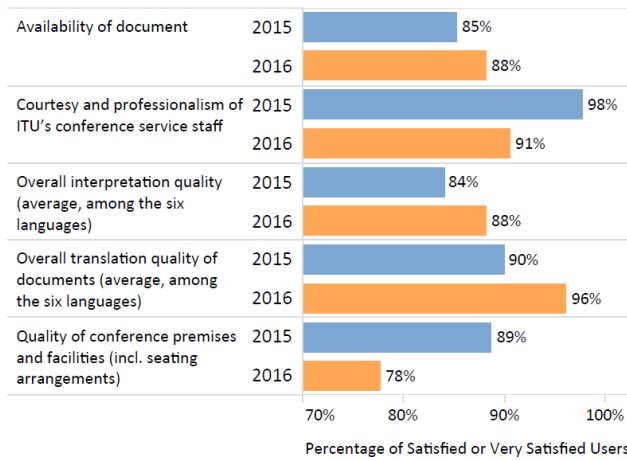
Enabler E.2: Ensure efficient and accessible conferences, meetings, documentation, publications and information infrastructures

**Outcomes:**

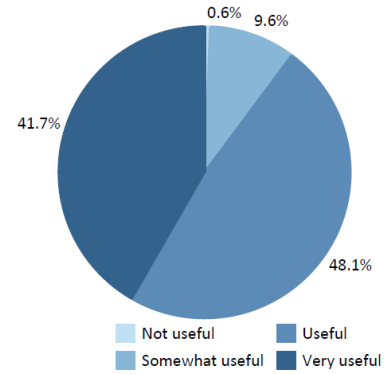
E.2: Efficient and accessible conferences, meetings, documentation, publications and information infrastructures

## Progress achieved

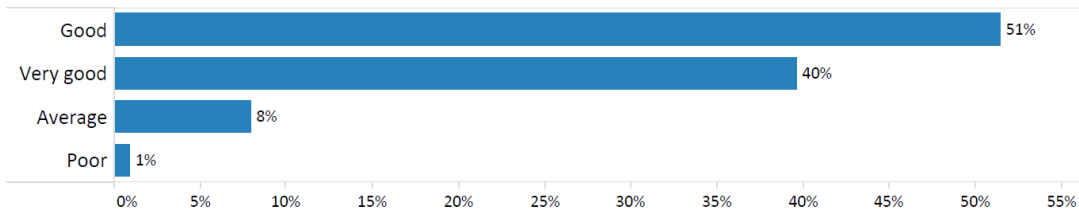
**User satisfaction with events  
(2015: WRC-15, 2016: WTSA-16)**



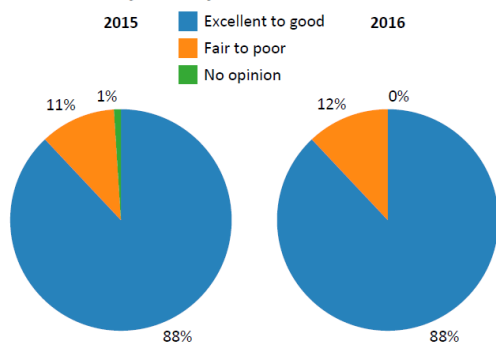
**User appreciation of usefulness of topics of ITU publications (2015)**



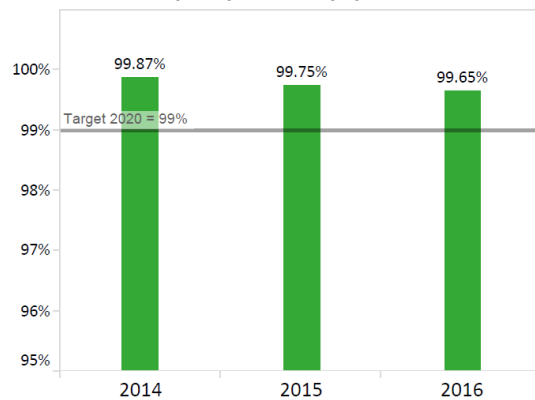
**Rate of Quality of ITU Publications (from ITU Membership Annual Survey 2016)**



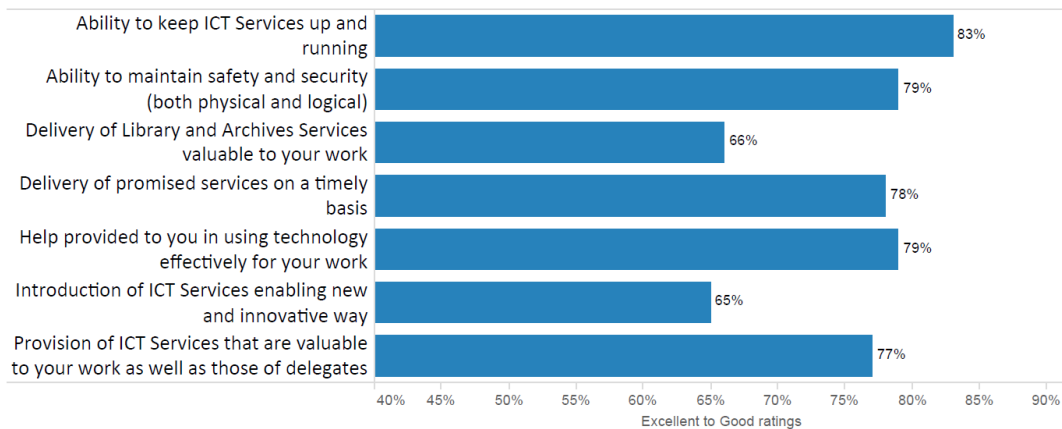
**Satisfaction of Users with ICT services**



**Availability and functionality of ICT services**



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



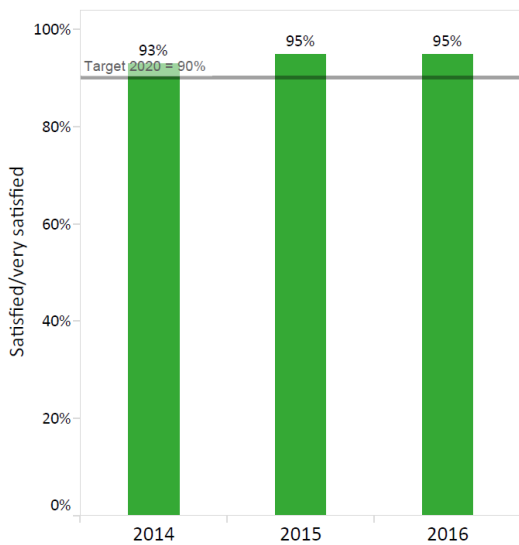
### Enabler E.3: Ensure efficient membership-related, protocol, communication and resource mobilization services

#### Outcomes:

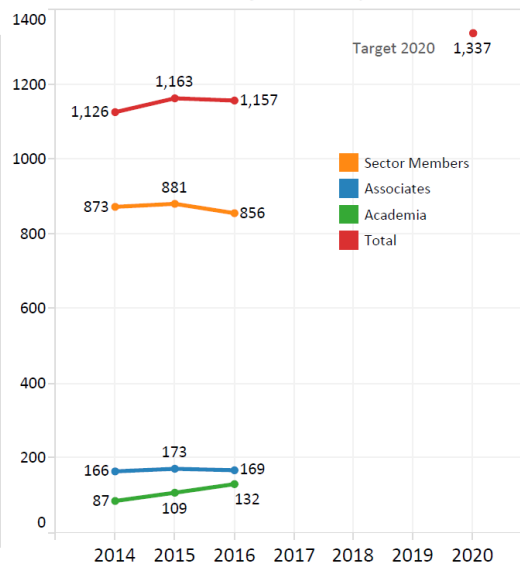
E.3: Efficient membership-related, protocol, communication and resource mobilization services

#### Progress achieved

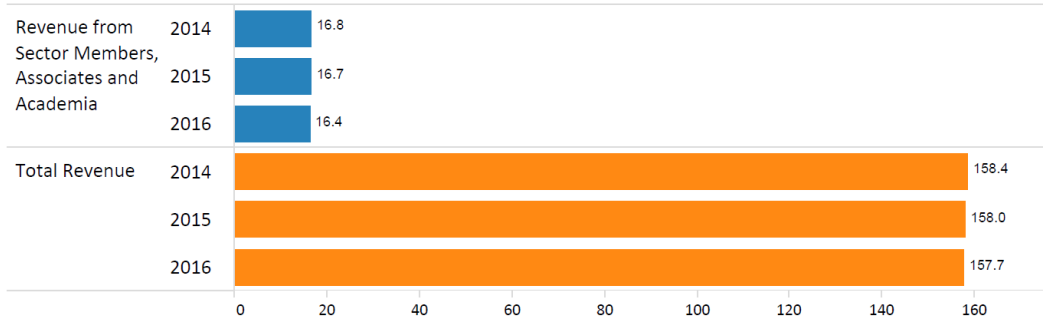
**Member satisfaction: Sector Member, Associates and Academia**



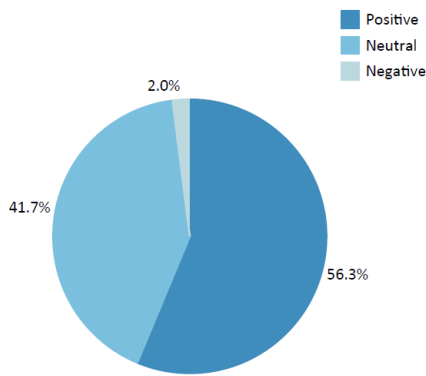
**Number of memberships**



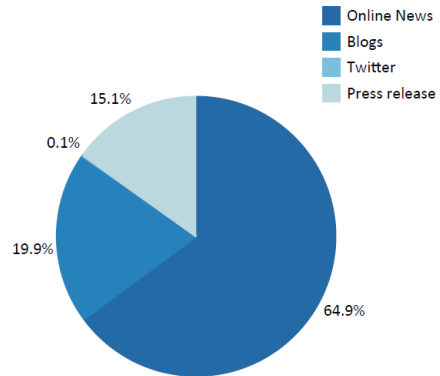
**Total Revenue (MCHF)**



**Media coverage referencing ITU (2015)**



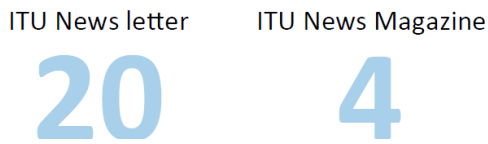
**Engagement level across digital channels (2015)**



**Number of Views of ITU Channels (2016)**

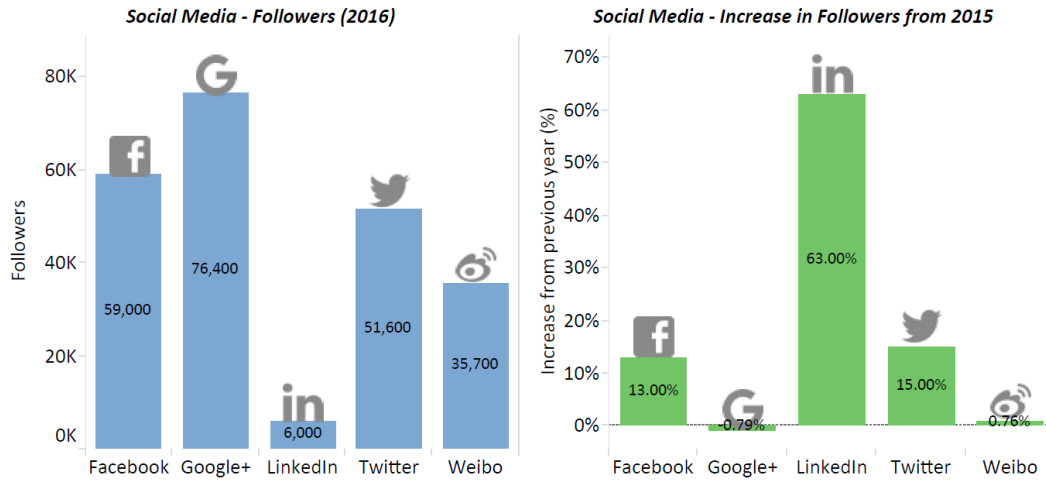


**Unsubscribe rates (per 100k)**



**Year-on-year increase to ITU Blog traffic (%)**



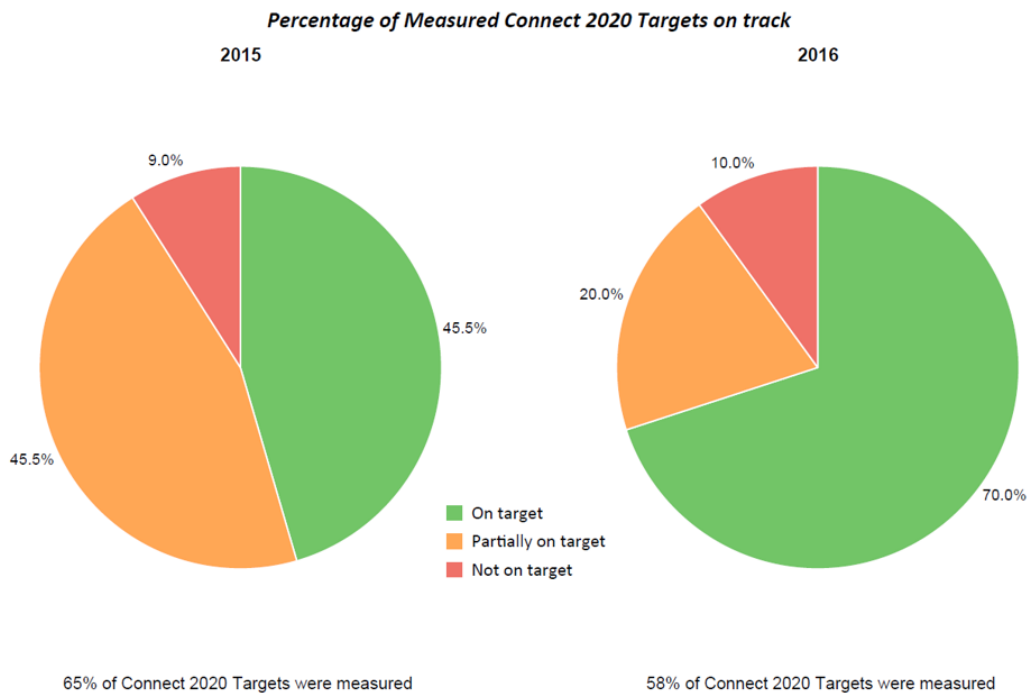


### Enabler E.4: Ensure efficient planning, coordination and execution of the strategic plan and operational plans of the Union

#### Outcomes:

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

#### Progress achieved



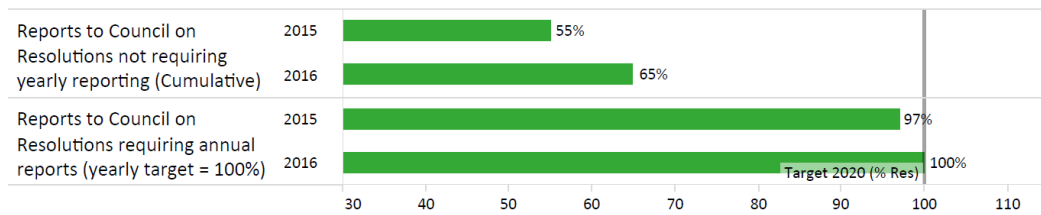
### Enabler E.5: Ensure effective and efficient governance of the organization (internal and external)

#### Outcomes:

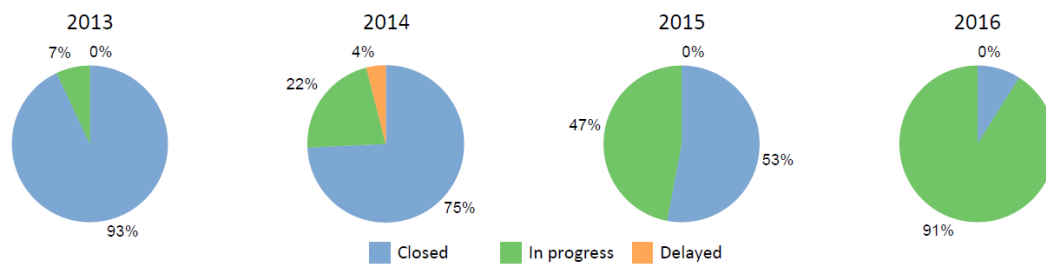
E.5: Effective and efficient governance of the organization (internal and external)

## Progress achieved

**Level of Implementation of the Governing bodies' decisions**



**Internal Audit findings and recommendations**



### 7.1 Support Services / Processes

#### S.1 Management of the Union

The Coordination Committee and the Management Coordination Group 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 and to enhance and streamline ITU's business processes and implement results-based budgeting (RBB) and RBM. The Strategic Planning and Membership Department (SPM) continued to take key responsibility for cross-sectoral matters in 2016 and provided overall planning and support services to the Coordination Committee, the Management Coordination Group, and the Inter-sectoral task force.

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

The C&P secretariat provided support for all ITU events. From March 2016 to February 2017, C&P supported a total of 235 events in 50 countries and service was provided in Geneva for 20,730 participants for 138 events and 561 meeting days. Of this total, 56 events were interpreted, resulting in as many as 1,760 interpreter-days. Some 37,885 pages of documentation were processed in the six languages. Paperless meetings, e-participation, and accessibility issues have been pursued, allowing considerable reductions in reproduction costs, as well as enhancing operations, and delivery methods and times.

#### S.3 Publication services

ITU continued to publish flagship and various other publications in both print and digital/electronic versions. Over the years many publications have been added to the free online access offer to disseminate information and reach out to wider general public. These include major publications such as the Radio Regulations, Recommendations, ITU's Basic Texts, WCIT Final Acts, Council Resolutions and Decisions, and ITU Handbooks.

Sales income for 2016 reached CHF 19.02 million, surpassing the 2016 budgeted income of CHF 18.5 million, and surpassing 2015 actual sales income of CHF 16.72 million. More information can be found in C17/21 and C17/INF/4.

#### **S.4 ICT services**

(ISD) Information services were successfully provided for major events including Council-16, ITU World Telecom 2016, WRS-16, WTSA-16, WSIS Forum 2016, and GSR WTIS in Botswana, as well as for the corporate governance, strategy, and communication activities of the Union. Audio and video service improvements in several meeting rooms were implemented.

Customer Relationship Management (CRM) Event Management services have been successfully used in the Bureaux and Departments, to prepare, launch, and manage several ITU conferences. Event Management processes covered were: event planning & preparation, communication/marketing, resource mobilization (for sponsorships), online and onsite event registration, and business intelligence and reporting.

ICT Security in the operational environment has been strengthened as part of an ongoing process, and includes improved monitoring and reporting of possible ICT attacks.

The Proposal Management System, a cross-sector Solution (used by, among others, the Conference and Publications Department, Docs Controls, Assistants, Councillors, Focal Points, Editorial Committee, Member States), is now used before, during and after all of the Union's World Conferences or Assemblies.

New Storage Service (SAN) was deployed improving reliability and security, faster access to data, and increased storage capacity.

#### **S.5 Safety and security services**

(ISD/SSD) Safety and security planning and services were successfully provided for major events including Council-16, ITU World Telecom 2016, WRS-16, WTSA-16, WSIS Forum 2016, BDT-GET-Kuwait, BDT-GSR-Egypt, BDT-CBS-Kenya, and BDT-WTIS-Botswana, as well as for the corporate governance, strategy, and communication activities of the Union.

Safety and security policies, procedures, audits, and guidelines at headquarters, regional, and area offices were developed, reviewed, and implemented. The efficiency and effectiveness of safety and security functions were reviewed and monitored, and advice was provided on all safety- and security-related matters for headquarters and field offices. Management of the implementation of the security enhancement and modernization project at ITU's HQ premises was initiated, including the convergence of identity management for both physical and logical access to ITU's buildings and systems. More information can be found in C17/63.

#### **S.6 Human resources management**

Human resources management comprises both Human Resources and Maintenance and Upgrading of ITU Buildings.

##### **S.6.1 Human Resources (HR) management**

During 2016, most of the efforts of the HR Management Department were concentrated on the implementation of decisions taken by the last Council session held in May 2016.

Council 2016 adopted Decision 593 endorsing the elements of the new compensation package approved by the UNGA Resolution 70/244 based on recommendations submitted by the ICSC. The HRM Department worked on the preparation and promulgation of the regulatory framework (amendments to the Staff Regulations and Staff Rules, service orders), through the internal consultative process and, in close collaboration with the Information Service Department on the configuration of the ITU

ERP system (SAP-HCM) for the integration of the new compensation elements. Information sessions were organized for the staff in the related categories.

In view of the endorsement by Council in its Decision 594, of the extension as at 1 January 2018 of the mandatory age of retirement at 65 to staff members recruited before 1 January 2014 and who would be in service on 1 January 2018, the HRM Department managed the implementation of a voluntary separation program launched for mitigating the financial implications of that decision on the budget to be established for the biennium 2018-2019.

The Department also concentrated its efforts on activities that had been endorsed by the ITU management and which, for some of them, were supported by the JIU in its formal and informal recommendations in its report on the Administration of ITU, such as:

- development of a new performance appraisal system: the call for bids had been completed and a service provider selected. The configuration of the new system will start at the beginning of February with a go-live objective for May-June 2017;
- development of an action plan in the areas of gender balance, geographical distribution, and training and staff development activities;
- management of the health insurance scheme for ensuring compliance with the social obligation of the ITU as an employer.

HRMD continued its work within the framework of the modernization of HR functions in view of improving the delivery of services in recruitment, organization structure management, and job classification, training, HR policies, and legal matters.

In the area of social benefits, focus was dedicated on the management of the medical insurance scheme (CMIP) administered by Cigna and the continuation, through the Management Committee, of the overall review of the scheme, including its premium structure, deductible scheme and benefits description, taking into account the demography and needs of the insured population while establishing a short and long-term financial sustainability of the system. The functions of the Executive-Secretary and the CMIP secretariat are assumed by members of the Department, who continued to supervise the transition from SHIF, mainly related historic SHIF data and its transfer to the new provider Cigna. The SHIF reconciliation exercise completed in 2016.

The secretariat liaised with the administrator, Cigna, on issues mainly related to the application of the benefits plan. A particular focus was put on improved communications, with the publication of information notes under the guidance of the Management Committee and in collaboration with Cigna.

In the area of well-being and preventive care, the secretariat, along with WIPO and with the support of Cigna, continued to organize joint preventive actions and information sessions on well-being issues, such as the influenza vaccination campaign for retirees.

Further information on HRMD can be found in C17/53.

### **S.6.2 Maintenance and upgrading of ITU buildings**

During 2016, the Facilities Management Division (FMD) through its Buildings and Technical Installations Service and Logistics Service has completed the following major projects: replacement of the hot-water boilers for the Tower; assessment of the presence of hidden materials in Tower and Varembe that would result in extra demolition or renovation costs; renovation of the maintenance cradle for the Tower exterior walls; doubling of the provision of delegate electronic locker storage in Montbrillant; doubling of bicycle storage at HQ; replacement of Montbrillant cafeteria heating circuit; replacement of SG meeting room cooling system; improvements to Popov control room cooling and reprography area fume extraction. FMD has also collaborated on the buildings aspects of the ITU Access Control project. Other logistic management and prudent maintenance work has continued as normal.



Concerning the issue of a long-term solution for ITU headquarters premises, FMD has led the secretariat work and produced supporting materials for the project, through a successful completion of CWG-HQP and Council-16 Decision to authorize a new building to replace Varembe and the Tower, to the successful grant of the first loan from the Host Country for funding an architectural competition and the consequent study works. This activity included collaboration with other Geneva-based organizations to find best practices.

ITU has continued to reduce its own operational environmental footprint. For the consolidated UN “Greening the Blue Report 2016”, pertaining to 2015 final data, ITU’s overall worldwide operational footprint was 3.56 tCO<sub>2</sub>e per capita according to UN standard reporting protocols. This is 54% better (lower) than the average for all reporting UN organizations, and places ITU being in the best quintile of the 66 organizations reporting. ITU’s net reduction of emissions per capita from 2010 to the latest (2015) data is 7% per annum. ITU is now climate-neutral worldwide and is certified as such by UNFCCC for the reporting year 2015.

### **S.7 Financial resources management**

The Financial Resources Management Department (FRMD) monitored the 2016 Union’s budget implementation, involving activities such as budget management and control, accounting, cost accounting, assets management, procurement and travel management. The financial activities of FRMD for the fiscal year ending 31 December 2016 will be completed by the first quarter of 2017 and is presented to Council 2017 (see document C17/42). 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, the Independent Management Advisory Committee (IMAC) and the Joint Inspection Unit (JIU).

For the 6th 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 are being closely monitored and a full actuarial study on these two topics was produced at the end of 2016 (see document C17/46).

The Draft Budget for 2018-2019 was presented to the Council Working Group on Financial and Human Resources at its 7th meeting held from 30 January to 1 February 2017. It amounts to CHF 320.1 million and is a balanced budget with no withdrawal from the Reserve Account foreseen. It is submitted to Council 2017 in document C17/10.

ITU has adopted a voluntary separation programme to compensate the costs of the adoption of the retirement age at 65. FRMD was closely involved in the process and incorporated the results in the draft Budget for 2018-2019.

Pursuant to the adoption of Resolution 152 (Rev. Busan, 2014), FRMD has devoted significant efforts in the area of reduction of debts. It has had a positive impact on the payment of contributions as the collection rate for 2016 was +97% reflecting an improvement compared to previous years and a consequent reduction in the debts of Sector Members and Associates. Additionally, FRMD has continued to monitor the efficiency gains and cost-saving measures with a view to ensuring the most effective and economical use of ITU’s resources (see document C17/45).

Finally, FRMD has further reviewed the rules governing official travel, leading to noteworthy improvement in the processing of travel requests and contributing to the reduction in travel costs for the Union (see document C17/45).

### **S.8 Legal services**

The Legal Affairs Unit (JUR) has provided general legal support and advice to WTSA-16, Council, Council Working Groups, and IMAC, and participated in the resolution of sensitive political issues. JUR continued to act as the secretariat of the TSB Director’s Ad hoc Group on Intellectual Property Rights. JUR is also deeply involved in the new building project.

## S.9 Internal audit

Internal Audit continued to perform the follow-up of recommendations of previous years and reported further progress on this to IMAC. Several assurance engagement audits were conducted in 2016. The objectives of the assurance engagements were to assess whether ITU internal controls, governance, and risk management processes are functioning. The priority of the recommendations resulting from the audit work is classified according to the impact and likelihood of the deficiency (critical, high, medium, low). The Secretary-General also transmits to the Council for its consideration an annual report on internal audit activities. This report may be found in Council document C17/44.

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

In 2016, the total number of ITU Sector Members, Associates, and Academia was stable compared to 2015, reaching a total of 832 (+5 Members), accounting for 1,158 Memberships. This can be attributed mainly to 28 new Academia members, which offset a decrease of 22 Sector Members (mostly in ITU-T and ITU-D). Following increased outreach to universities in 2016, ITU finished the year with Academia in 53 Member States. Asia-Pacific and Americas continued to recruit the most new Academia. Most new Academia in 2016 were from developing countries. The consolidation of memberships (denunciations and reductions of multiple memberships) from some long-standing industry members (including Alcatel-Lucent, Nokia, Telecom Italia Sparkle, Airbus, Microsoft, Hewlett Packard, Millicom, SFR, Motorola), the exclusion of 19 Sector Members for non-payment, and the relative shift from Sector membership to lower-fee categories (Associates and Academia) led to a decrease in revenues. The acquisition of new members occurred both from ITU's traditional base (including Monaco Telecom, BICS, VimpelCom Group, Kuwait Telecommunication Company – Viva, Plintron, Videotron, Nagravision/ Kudelski) as well as from widening participation among new industry stakeholders (including Alibaba, Hyundai, PT Bank Rakyat Indonesia, and Future Cities Catapult).

## S.11 Communication services (audio/visual services, Press release services, Social media, management of the web, branding, speechwriting, ICT Discovery)

ITU continues to adapt its communications activities to the fast-paced digital media environment and is increasingly integrating and mainstreaming digital and social media tools into its overall communications mix, with particular attention paid to the merging content and engagement fields of social, video, audio and graphic design.

Highlights of communication activities in 2016 are:

- New #ICT4SDG campaign launched for ITU members and stakeholders
- Full ITU News digital transition and development of new digital products
- 60% year-on-year growth for ITU Blog
- Successful completion of first phase of ITU's new Visual Identity exercise
- Record number of ITU events supported in Geneva and internationally
- Contributed to designing solutions for multi-lingual content on the web
- Regular inter-sectoral and inter-agency communications coordination
- New cost-effective Audio-Visual production procedures in place for 2017
- Published six Opinion Pieces in editorial sections of tier one media
- Achieved year-on-year growth in all ITU social media channels

### ITU News – full digital transition and new digital products:

ITU News Magazine was revamped into a dedicated digital product. For detailed information see section I.3-1.

### ITU Audio-Visual Production

ITU produced 477 videos for the ITU YouTube Channel last year as well as numerous podcasts and video messages.

The number of views has remained steady around the 200,000 mark (217,233 for 2016) for the last five years from a jump of more than doubling the 2011 figures (97,448), and now approx. 1.5 million total views since the channel launch in 2008. This could be an indication that this is the most that can be achieved in numbers of views with the kind of videos that are being produced, but it may also reflect the fact that videos are being disseminated through a wider range of channels such as ITU Facebook, as well as re-versioned videos as podcasts on ITU SoundCloud, which are not reflected here. There is room for growth here if production is focused on videos that appeal to wider audiences and that are more shareable, i.e. shorter, punchier, more targeted story-led videos based around topics of current interest, which require devoted resources and planning. Subscriber figures continue to rise steadily, with 928 new subscribers in 2016 to a current total of around 4,800.

All things considered, both in actual facts and figures and from the feedback received, current production output is on track. However, to evolve ITU's communication products to keep in step with the fast-evolving multi-social-media landscape, this will mean a shift to producing content that is tailored for social media specifically, rather than adapted for it.

### Media relations and press releases:

Communication services included also media relations and press releases (production and distribution). In 2016 there were 62 press releases, 24 communiques, and 20 media advisories. ITU aims to explore new channels and formats so the number of press releases can be reduced keeping them focused on newsworthy topics alone.

### Social Media:

2016 achievements:

- Gained control of a 'rogue' ITU LinkedIn account and started posting at the beginning of 2016 and has grown from less than 1k members to over 6k.
- Joined the Facebook momentum for livestreaming video with a Girls in ICT Day Facebook Live report from ITU HQ and GEM-Tech awards event from ITU Telecom BKK.
- Ranked in Top 10 Social Media Index out of 43 international organizations.

### #ICT4SDG – New Campaign to promote role of ICTs to achieve SDGs

Building on the success of membership-oriented campaign for ITU150, a similar approach is being used to support membership in their communications and advocacy promoting the role of ICTs in achieving progress in the SDGs. Examples of outcomes of this work by the end of 2016 are the Toolkit on Trello with existing ITU4SDG collaterals for all stakeholders and the ITU SDG mapping tool.

### Visual Identity and Branding:

The ITU Visual Identify Exercise was a predominant communications activity during 2016 and included 58 interviews conducted with staff, more than 4,000 graphic files produced to test a range of possible designs and use scenarios; more than 20 logo proposals created and tested; 10+ presentations given (to other UN agencies, to external agency, to SPM and C&P, to EOs), and 22 pages of guidelines presented.

The new Visual Identity roadmap, including branding guidelines, new workflows, and an evolution of the ITU's look and feel, were presented to senior management (MCG) in December 2016 and fully supported and approved. 2017 will see the roll out of these recommendations which will continue to require resources and investment, both new and re-allocated.

#### ICT Discovery:

ISD/Library and Archives developed new procedures for handling visits to ICT Discovery in response to reduced staff and in preparation for upcoming changes to ITU buildings. Library and Archives also continued to maintain the History of ITU Portal which provides access to key historical ITU documents. Significant new content was added during 2016.

### **S.12 Protocol services**

In 2016, the ITU Protocol Service received members of royal families, Heads of State and Government, Ministers and CEOs at the ITU World Telecom event in Bangkok, Thailand and at WTSA-16 in Hammamet, Tunisia, as well as during conferences and events in Geneva. Several Ambassadors' meetings were organized with the aim of keeping the diplomatic community apprised of all future activities of ITU. In order to keep the ITU colleagues aware of the services provided by the Protocol Service to the Union an 'ITU Talk' was given at headquarters, which was also webcast to all staff members around the globe. The Protocol Service is also one of the main drivers of the activities of the Broadband Commission for Sustainable Development, and to this end organized two meetings, one in Dubai, United Arab Emirates, on the margins of the Global Education & Skills Forum (GESF) and the other at the Yale Club in New York on the eve of the United Nations General Assembly. The Protocol Service officially took on the new responsibility of the organization of Special Events for ITU as of October 2016.

### **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, as well as the Council Working Group (CWG) meetings in October 2016 and January-February 2017. It directed, coordinated, and oversaw the preparation of the reports to the Council and continued to monitor the implementation of all PP and Council decisions. It also provided expert advice and support to the Council Chairman, as well as Chairmen and secretaries of Council Working Groups.

Preparation for PP-18 has already begun, the details of which may be found in C17/5.

Additionally, GBS and ISD/Library and Archives provided support for the review of the draft ITU Information/document access policy by CWG-FHR and Council-16, and worked together to develop the necessary infrastructure and procedures for implementation of the policy as of 1 January 2017. Further information is available in C17/66.

Further details on the 2016 session of ITU Council and CWGs can be found in sections 8.1 and 8.2.

### **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 has been used for ITU World Telecom in 2014, 2015, and 2016, and for ITU-T Study Groups 11 and 13 in 2015. Roll-out to other ITU events started in 2016.

### **S.15 Resource-mobilization services**

PP14 (Res. 158 and Decision 5) requested the Secretary-General to explore options for generating revenues. ITU management set up an internal group chaired by the Deputy Secretary-General and tasked it to study this topic and make proposals. These proposals are included in the annex of a document entitled "Improving the stability and predictability of the financial base of the Union," which was presented to the January 2017 meeting of the CWG-FHR. This document notes that the top priority for Resource Mobilization is ensuring stable assessed contributions from ITU's Members,

as this source accounts for almost 70% of the regular budget. These funds are used to support the implementation of the strategic and operational plans of the Union. To complement this source, various options are being considered to increase cost recovery revenues, as well seek extra-budgetary resources from partners outside of ITU's membership, to diversify sources of income. In this vein, the Secretariat is currently exploring the potential for greater support from major foundations for voluntary contributions to support activities not covered by the ITU regular budget. This document also provides the recently approved event-related sponsorship guidelines along with draft principles for Resource Mobilization, both of which are in line with UN best practice.

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

*Monitoring and reporting:* A new web-based reporting tool has been introduced for the ITU Annual Progress Report. This tool has been developed to allow management and membership to track progress on the implementation of the ITU-results framework and further assess monitoring requirements. The process of planning, developing and institutionalizing data collection and reporting is ongoing.

In line with the UN System-wide Action Plan for implementation of the CEB Policy on gender equality and the empowerment of women, the reporting work included the development of the Gender Dashboard, a continuously evolving snapshot of the current situation of women in ITU and ICT Sector.

*Intersectoral coordination on corporate management issues:* The work of the Inter-Sectoral Coordination Task Force (ISC-TF) continued through 2016 including the following outcomes:

- The development of the Draft Risk Management Policy and Risk Appetite Statement, to be presented to the 2017 session of Council. Further implementation of systematic risk management, included also developing and maintaining Risk Registers and dashboards.
- The coordination of the follow-up to the JIU recommendations relevant to ITU, including the completion of the updating exercise of acceptance and implementation of the 2006-2014 JIU Recs, and coordination of the Action Plan to implement the JIU Recommendations from the "JIU Review of ITU management and administration".
- The coherent elaboration of the Operational Plans 2017-2020: as the Operational Plans for 2017-2020 were developed in a coherent and more concise format, following the Results-based management principles, they included a set of Outcome indicators, as well as indicators for the Enablers. The process to regularly monitor those indicators for all sector and inter-sectoral objectives is now in place.

*Supporting the implementation of the 2030 Agenda:* The ITU SDG Mapping Tool was introduced as a concept at the 2016 Session of Council and was further developed, aiming to provide a comprehensive visual overview of ITU contributions to the Sustainable Development Goals, by visualizing the mapping and the linkage of the ITU strategic framework, Connect 2020 Agenda, WSIS Action Lines and the SDGs.

In support of the work of the implementation of the ITU Connect 2020 Agenda, two discussion papers were elaborated: the first one on "Working Together to Connect the World by 2020", (1) highlighting the largely positive economic impact of the Internet on economic growth, (2) estimating high-level infrastructure investment requirements of USD 450 billion to connect the next 1.5 billion, and (3) providing evidence of a generally positive link between a progressive enabling and regulatory environment and broadband penetration; while the second one on "Working together to achieve Connect 2020 Agenda Targets" provided greater detail on who and where the unconnected are today, what the key challenges are to meet the Connect 2020 Agenda Targets, and what possible measures can accelerate the connection of the unconnected to achieve those Targets.

ITU also continued to actively participate in the work of the UN Strategic Planning Network (UNSPN), participating in the meeting held in Rome (December 2016), primarily focusing on the process of the adoption of the Sustainable Development Goals and the strategic implications for the planning processes of the UN agencies.

## 8 ITU Governing Bodies Activities

### 8.1 ITU Council

The 2016 session of the Council was held 25 May – 2 June 2016. Ms Julie ZOLLER (USA) presided as Chair and Ms Eva SPINA (Italy) was Vice-chair. Mr Kirill OPARIN (Russian Federation) served as Chair of the Standing Committee on Administration and Management (SC-ADM), and Ms Vernita HARRIS (USA) and Mr Abdourhamane TOURE (Mali) were Vice-chairs of SC-ADM.

The work of the Council was ably guided by the two efficient Chairs, adopting 20 formal texts, including six new resolutions, three modified resolutions, nine new decisions and two modified decisions. The C16 agenda (C16/1(Rev.1)) and related documentation, along with summary records and complete texts of resolutions and decisions, can be found on the Council website at: <http://www.itu.int/md/S16-CL-C/en>.

Proposed dates for the 2018, 2019, and 2020 Council sessions can be found in document C17/2.

### 8.2 Council Working Groups (CWGs) and Expert Groups

Two clusters of CWGs (including the Expert Group on ITRs) were held in the reporting period: one in October 2016 and one in January/February 2017. These groups reviewed tasks mandated to them by the Council; the discussions and summaries can be found in the Chairmen reports as follows: CWG-WSIS, C17/8; CWG-Internet, C17/51; CWG-COP, C17/15; CWG-Languages, C17/12; CWG-HQP, C17/7; CWG-FHR, C17/50; EG-ITRs, C17/26. Full information on each CWG can be found here: <http://www.itu.int/en/council/Pages/groups.aspx>.