Performance Report

2017

ITU

PERFORMANCE REPORT 2017

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Foreword by the Director of the Telecommunication Development Bureau

I have the honor to present the ITU-D performance report for 2017.

This report provides the status of implementation of the objectives, outcomes and outputs defined in the ITU-D Operational Plan. It puts emphasis on the results achieved during the implementation of the objectives, outcomes and outputs of the Sector as well as on the outcome indicators and performance indicators. One of the main highlights of 2017 has been the 7th World Telecommunication Development Conference (WTDC-17) of ITU, held from 9 to 20 October 2017 in Buenos Aires, Argentina. It attracted over 1368 participants from governments, regional and international organizations, telecommunication-related entities, public and private-sector entities, academia, and other stakeholders. The Conference *inter alia* adopted the Buenos Aires Declaration, agreed on the ITU-D contribution to the strategic plan of ITU for 2020-2023, and approved the Buenos Aires Action Plan which aligns the work of the ITU-D with the strategic objectives of ITU so as to assist countries in harnessing the full benefits of ICTs.

The current report is structured around the 5 ITU-D objectives in line with the 2016-2019 Strategic Plan, Resolution 71 (Rev. Busan, 2014).

Brahima Sanou

Director, Telecommunication Development Bureau

PART 1 – Executive Summary

Outline of the Performance Report 2017

The 2017 Performance Report provides a comparison between outcomes and achievements as well as between expected and achieved results, together with the respective outcome indicators and performance indicators. It also provides the threat and risk assessment for 2017. These are specified for each objective and relevant outputs. This report builds on the report on the Implementation of the Dubai Action Plan, submitted to the seventh World Telecommunication Development Conference held in Buenos Aires, Argentina, and covers the additional period to the end of 2017.

The main results achieved by BDT in its objectives during 2017 are outlined below:

1   Objective 1: *"Foster international cooperation on telecommunication/ICT development issues"*

1.1   World Telecommunication Development Conference (WTDC)

The seventh WTDC (WTDC-17) of ITU was held from 9 to 20 October 2017 in Buenos Aires, Argentina, under the theme of "ICT for Sustainable Development Goals". It attracted 1368 participants from 134 Member States, 62 ITU-D Sector Members, 10 Academia, observers and the United Nations and its Specialized Agencies. The conference opened with a welcoming video message by Mr António Guterres, United Nations Secretary-General. During the first three days of WTDC-17, four plenary sessions were dedicated to the High-Level Segment during which 53 speakers addressed the conference, including the key note statement from Dr Tedros, Director General of WHO, provided by a WHO representative in Buenos Aires. Side events on 10 most relevant topics were held during the WTDC-17. In addition, 2 Ministerial Roundtables and a gala event were organized to celebrate the 25th Anniversary of ITU-D. All former Directors of the Telecommunication Development Bureau (BDT) were present in the celebrations. WTDC-17 prepared the way forward for ITU-D and BDT for the upcoming period.

The main outcomes of the conference were:

– Adopted the Buenos Aires Declaration, highlighting the main conclusions and priorities established by the conference, and reinforcing the political support towards ITU's development mission and strategic objectives;

– Agreed on the ITU-D contribution to the strategic plan of ITU for 2020-2023, to be considered at the next plenipotentiary conference to be held in in Dubai, UAE in 2018;

– Adopted the Buenos Aires Action Plan (BaAP) that aligns the work of the ITU-D with the strategic objectives of ITU so as to assist countries in harnessing the full benefits of ICTs.

Moreover, WTDC-17 adopted five regional initiatives per development region. It also adopted the composition of the TDAG Bureau and appointed the TDAG Chairman and vice-chairmen. The Conference approved 42 revised and 4 new Resolutions and abrogated 6 Resolutions, 5 of which were merged with other existing ones. WTDC-17 adopted 7 Questions each for Study Groups 1 and 2. Finally, the Conference noted the report of the Committee 2 on Budget control, which includes the financial implications of the implementation of the regional initiatives for the year 2018-2021.

WTDC	Resolutions 1, 2, 5, 30, 33, 37, 50, 53, 59, 81, 82
PP Resolutions	Decisions 5, 13 Resolutions 25, 71, 72, 77, 111, 131, 133, 135, 139, 140, 151, 154, 165, 167
Council	Resolution 1372
WSIS Action Line	WSIS Action Lines C1 and C11
Contributing to SDG Targets	SDGs: 1, 3, (target 3.d), 5, 10, 16 (targets 16.5, 16.6, 16.8), 17 (targets 17.9, 17.16, 17.17, 17.18, 17.19)

1.2   Regional preparatory meetings (RPMs)

In line with WTDC Resolution 31 (Rev. Dubai, 2014), BDT organized one regional preparatory meeting (RPM) per region for WTDC-17, each preceded by a one-day meeting of the regional development forum (RDF). In 2016, the RPMs were organized in the Kyrgyz Republic, for the Commonwealth of Independent States (CIS) and in Rwanda, for Africa. In 2017, the remaining RPMs were organized in Sudan, for the Arab States, in Paraguay, for the Americas, in Indonesia, for Asia and the Pacific, and in Lithuania, for Europe.

All six RPMs were held with the objective of identifying priorities at the regional level for the development of telecommunications and information and communication technologies (ICTs). They gave careful consideration to the results of the implementation of the Dubai Action Plan since 2014 and mainly focused their discussions on the priority issues, topics, Questions, and regional initiatives included in the Buenos Aires Action Plan (BaAP). All RPMs recognized that ITU-D regional initiatives constituted an effective mechanism for fostering implementation of the WSIS outcomes and 2030 Agenda for Sustainable Development, including the achievement of the Sustainable Development Goals.

In addition, all RPMs arrived at a set of proposals on priority issues for their respective regions that served as a basis for the formulation of contributions to WTDC-17.

The following key documents were submitted to and reviewed by all six RPMs:

−   Preliminary Draft ITU-D Contribution to the ITU Strategic Plan for 2020-2023;

−   Preliminary Draft ITU-D Action Plan;

−   Preliminary Draft WTDC-17 Declaration;

−   Rules of Procedure of ITU-D (WTDC Resolution 1);

−   Report on streamlining WTDC Resolutions.

After TDAG-17, WTDC-17 preparatory meetings were organized by the following regional groups: African Telecommunications Union (ATU), Inter-American Telecommunication Commission (CITEL), League of Arab States (LAS), Asia-Pacific Telecommunity (APT), Regional Commonwealth in the Field of Communications (RCC), and European Conference of Postal and Telecommunications Administrations (CEPT).

WTDC	Resolutions 1, 5, 17, 25, 30, 31, 33, 37, 48, 50, 59, 61, 81
PP Resolutions	PP Decisions 5, 13 PP Resolutions 25, 71, 111, 135, 140, 165, 167
WSIS Action Line	WSIS Action Lines C1 and C11
Contributing to SDG Targets	SDGs: 1, 3, (target 3.d), 5, 10, 16 (targets 16.5, 16.6, 16.8), 17 (targets 17.9, 17.16, 17.17, 17.18, 17.19)

1.3   Telecommunication Development Advisory Group (TDAG)

The 22nd meeting of TDAG took place from 9 to 12 May 2017 at ITU headquarters in Geneva. It was the last meeting before WTDC-17. The meeting of TDAG addressed the following broad range of subjects:

•   Preparations for WTDC-17, including (i) an update on the preparations for the Conference, (ii) the report of the Regional Preparatory Meetings Coordination Meeting, (iii) the structure of WTDC-17, (iv) the ITU-D Contribution to the Draft ITU Strategic Plan, (v) the Draft ITU-D Action Plan, and (vi) the Draft WTDC-17 Declaration;

•   Outcomes of WTSA-16 related to the work of ITU-D;

•   Implementation of the ITU-D Strategic Plan and Operational Plan 2016, including regional initiatives;

•   ITU-D four-year rolling Operational Plan 2018-2021, including a progress report by the TDAG Correspondence Group on the Strategic Plan, Operational Plan and Declaration (CG-SPOPD);

- 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;
- Working methods and Rules of Procedure of ITU-D (WTDC Resolution 1), including a report by the TDAG Correspondence on Rules of Procedure of ITU-D (CG-Res1);
- Streamlining WTDC Resolutions;
- ITU-D 25th Anniversary celebrations;
- Collaboration with the other Sectors, including a progress report on the work of the Inter-Sector Coordination Team on Issues of Mutual Interest;
- ITU-D Study Group-related matters;
- Membership, partnership, and innovation-related matters.

The following additional meetings took place during the TDAG week:

- Correspondence Group on Rules of Procedure of the ITU Telecommunication Development Sector (ITU-D) (WTDC Resolution 1) (CG-Res1);
- Correspondence Group on the Strategic Plan, Operational Plan, and Declaration (CG-SPOPD);
- Correspondence Group on Streamlining WTDC Resolutions (CG-SR);
- Inter-Sector Coordination Team on Issues of Mutual Interest.

Some of the main outcomes of TDAG were as follows:

- In relation to the ITU-D Contribution to the Draft ITU Strategic Plan, TDAG drew attention to documents TDAG17-22/7, TDAG17-22/8, and TDAG17-22/9, which contained the compilation of outcomes by RPMs and contributions to TDAG-17, and invited members to use these documents in their preparation for WTDC-17.
- In relation to the Working methods and Rules of Procedure of ITU-D (WTDC Resolution 1), TDAG advised members to use the compilation document TDAG17-22/10 in the preparation for WTDC.
- In relation to streamlining WTDC Resolutions, TDAG supported the report of CG-SR and appreciated the proposal to reduce the number of study Questions and efforts to avoid duplications.

WTDC	Resolutions 1, 5, 17, 24, 30, 33, 37, 50, 59, 61, 81
PP Resolutions	PP Decisions 5, 13
	PP Resolutions 25, 71, 111, 135, 140, 151, 154, 165, 166, 167
Council	Resolution 1372
WSIS Action Line	WSIS Action Lines C1 and C11
Contributing to SDG Targets	SDGs: 1, 3, (target 3.d), 5, 10, 16 (targets 16.5, 16.6, 16.8), 17 (targets 17.9, 17.16, 17.17, 17.18, 17.19)

1.4   Study Groups

The ITU-D Study Groups held their third set of Rapporteur Group meetings for the 2014-2017 study period in January 2017. The SG1 Rapporteur Groups, including the Joint ITU-D/ITU-R Group for WTDC Resolution 9, met in Geneva from 9 to 18 January 2017, followed by the SG2 Rapporteur Group meetings from 18 to 27 January 2017. The Rapporteur Group meetings were an important milestone towards the completion of the expected deliverables for all study Questions for the study period. Significant progress was made on the expected deliverables, and the groups also brainstormed on possible future directions and related activities of their specific study Questions. These exchanges on the possible future of the study Questions were useful as members debated and formulated proposals on the same matters at RPMs and at WTDC-17.

- In conjunction with the Rapporteur Group meeting for Question 3/2 (cybersecurity), an open workshop was held on the topic of "Cybersecurity and risk assessments in practice" on 26 January

2017. Experts gathered to share their knowledge and experience on the practical assessment of cyber risks at the national level, in large organizations, and in critical infrastructure sectors. Supply chain risks and the role of standards for managing cyber risks in organizations were also debated.

- The final ITU-D Study Group 1 and 2 meetings for the study cycle took place in Geneva from 27 to 31 March 2017 and from 3 to 7 April 2017, respectively. The SG1 and SG2 meetings agreed on the Final Reports containing the deliverables called for by WTDC-14 for all SG1 and SG2 Questions. The groups also continued discussing the future of the existing study Questions, which in turn served to inform Member States as they prepared for WTDC-17.

- The SG1 and SG2 meeting dates for the next study period (2018-2021) were also considered.

- Sponsorship opportunities were made available for activities, such as exhibits, side and social events, around all ITU-D SG1 and SG2 meetings, including Rapporteur Group meetings in 2017.

- The call to Member States to nominate candidates for the positions of chairmen and vice-chairmen of ITU-D study groups for the next study period (2018-2021) was launched in May 2017.

- A total of 18 publications, available in the six languages, were finalized for WTDC-17 to display the outputs gathering the results of the studies and surveys conducted and reflecting the inputs received during the 2014-2017 study period.

- WTDC-17 reinforced the role of the ITU-D study groups to provide membership with a platform to share experiences, present ideas, exchange views, and achieve consensus on strategies to address telecommunication/ICT priorities. The Conference also appointed the new management team made up of two Chairmen and 23 Vice-Chairmen from the six regions. As to the scope of the ITU-D study groups for the new cycle 2018-2021, through its 14 new study Questions, ITU-D SG1 will continue to focus on the "Enabling environment for the development of telecommunications/ICTs" and SG2 will concentrate on "ICT services and applications for the promotion of sustainable development".

- The call to Member States, Sector Members, Associates and Academia to nominate candidates for the positions of rapporteurs and vice-rapporteurs for the 14 new study Questions was launched in November 2017.

WTDC	Resolutions 1, 2, 5, 9, 17, 21, 30, 33, 50, 59, 61, 80, 81
ITU-D	Recommendations 15, 16, 17, 19, 20, 21, 22
PP Resolutions	PP Decisions 5, 13 PP Resolutions 25, 71, 133, 135, 140, 154, 165, 166, 167
Council	1372
WSIS Action Line	WSIS Action Lines C1 and C11
Contributing to SDG Targets	SDGs: 1 (target 1.b), 3 (target 3.d), 5, 10, 16 (targets 16.5, 16.6, 16.10), 17 (targets 17.9, 17.16, 17.17, 17.18)

2 **Objective 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"*

2.1 Policy and regulatory frameworks

- ITU-D continues to share data, research, and analysis and publications on cutting-edge policy, regulatory, and economic issues.
  - o The 2017 Global Regulatory Outlook was launched in Q1 2017 (executive summary available at http://www.itu.int/en/ITU-D/Regulatory-Market/Pages/Outlook/2017.aspx) - a first report in a new annual series tracking market and regulatory trends in the ICT sector and their implications across the economy.
  - o A new report on Maximizing availability of international connectivity in developing countries: Strategies to ensure global digital inclusion as well as a discussion paper on the social and economic impact of digital transformation on the economy were released in 2017.
  - o Reports and White Papers analyzing new business models in a digital economy have been published.
  - o Reports have also been prepared on collaborative regulation for digital financial inclusion in Mongolia and Sudan, and a new project launched under the Financial Inclusion Global Initiative in three countries for the implementation at national level to leverage telecommunications/ICTs for Digital Financial Inclusion.
  - o An ITU Manual for QoS Regulation was prepared with input from ITU-T.
  - o Strategic Guidelines on International Mobile Roaming were prepared in collaboration with and with significant input from regional regulatory and other international and regional associations.
  - o A new series of reports on Artificial Intelligence for Development is being prepared.
  - o Inputs were provided to study group questions, in particular relating to ITU-D Study Group 1/1, 3/1, 4/1 and 6/1.
- Enhanced Knowledge-exchange tools and platforms to facilitate access to data (ICTEye, ICT Regulation Toolkit, the ICT regulatory knowledge centre). Access to the ICT Regulatory Tracker has been facilitated through its release on a new online micro-site, available here: (https://www.itu.int/net4/itu-d/irt/#/tracker-by-country/regulatory-tracker/2015);
- Gathering and publishing key regulatory and tariff data to facilitate evidence-based decision making: ITU-D has developed the ICT Regulatory Tracker, a unique data-based tool that covers over 186 countries for a period of nine years, showcasing national, regional, and global regulatory progress. The 2015 edition of the Tracker was updated, with the 2016 data being integrated and to be published in November. The 2017 edition of the annual ITU-D questionnaire on regulatory and policy issues was sent out to Membership to help track the evolution of ICT policies and regulation.
- Fostering key strategic dialogues, including the Global Symposium for Regulators, and delivering best practice guidelines on key regulatory and policy issues and approaches: Key strategic dialogues on International Mobile Roaming were pursued, draft strategic guidelines were shared, and the 17th edition of the Global Symposium for Regulators (GSR) and its pre-events (the Global Dialogue on Digital Financial Inclusion and the Regulatory Associations meeting and Private sector Chief Regulatory Officers meeting) were held from 11 to 14 July in Nassau, the Bahamas. More than 400 participants from some 60 countries, including government ministers and high level international policy makers from the world's information and communication technology (ICT) regulatory authorities and private sector executives attended the 17th edition of the ITU Global Symposium for Regulators (GSR-17).
- As the sole facilitator of WSIS Action Line C6, BDT is leading activities related to the enabling environment for investment and growth in the ICT sector and beyond. A facilitation meeting on the Regulatory Wheel of Fire: Collaborative Regulation to Leverage ICTs for SDGs was held during the WSIS Forum 2017. Preparations are underway for the WSIS Forum 2018.

- Assistance to Antigua & Barbuda in developing policy and regulatory frameworks and recommending an organizational, functional, and governance structure for the Establishment of An Independent Regulatory Authority for Antigua and Barbuda in accordance with newly enacted legislation.

- The study and report of the Broadband strategy for Burundi have been completed and validated in Yaoundé at the end of January 2017 in the ITU Area Office premises in the presence of 6 delegates from the administration of Burundi.

- BDT Forum on Economics and Finance in ICTs/ Telecommunication for Africa and the TSB-SG3 Regional meeting for Africa were held back-to-back on 30 January to 2 February 2017 at Victoria Falls, Zimbabwe. These meetings were attended by 91 participants from 25 countries and 5 institutions, namely ATU, SADC, ESMT and UPU. The Forum provided a platform at which economical and financial issues affecting the sector in different countries were discussed, and possible solutions were considered.

- International Mobile Roaming (IMR) Cost Model training for the SADC region was held on 29 March 2017 in Durban, South Africa, and it was attended by 10 SADC Member States and over 60 delegates.

- ITU Regional Forum on Consumer Information, Protection, and Rights for Africa 2017 was held in Cotonou, Benin on 14-16 March 2017 with 131 participants from 21 countries, including the ATU, GSMA and ESMT.

- Validation Meeting for the Broadband Universal Access Study and Household Survey for the Kingdom of Lesotho was held on 23 March, 2017 in Maseru, Lesotho. The final report provides policy and strategic guidance for broadband development in the Kingdom.

- The review of the National Broadband Policy and Associated Strategic Implementation Plan for Achieving a Digital Economy for the Republic of Namibia was prepared with the technical support from the ITU to align it with the new "Guidelines for the structure of a public policy document" released by the Government of Namibia at the end of 2016. The review was finalized and fully accepted by the Government of Namibia.

- The ITU Regional Economic and Financial Forum of Telecommunications/ICTs, organized by the ITU Telecommunication Development Bureau (BDT) in close collaboration with the Federal Telecommunications Institute (IFT) of Mexico, was to be held in Mexico City, Mexico on 20-21 September 2017. Due to an event of force majeure in Mexico (earthquake on 19th September), this activity had to be suspended and the determination of the new date is currently coordinated.

- Knowledge and best practices on the contribution of ICTs to the UN SDGs 2030 were shared during the ITU/BDT Regional Economic and Financial Forum of Telecommunications/ICTs for Arab States held in Nouakchott, Mauritania on 17-18 May 2017. The Forum was attended by 85 participants from 6 countries.

- Expert Group Meeting on Smart Grids, held on 28 February 2017 within the framework of the ITU Regional Initiative for Europe on Broadband, gathered more than 30 telecom and energy stakeholders and provided foundations for a study on smart grids to be released in Q2/2017.

- ITU Regional Forum for CIS and Europe on Innovation Capabilities and Growth of ICT Startups raised awareness of ITU activities in the regions, including the implementation of Regional Initiatives. This forum was attended by 54 participants from 12 countries (Europe and CIS).

- Completed a scoping mission on 17-28 September 2017 for the country implementation for Egypt and from 13 to 17 November in Mexico within the framework of the Financial Inclusion Global Initiative in collaboration with the World Bank and the Bill and Melinda Gates Foundation.

- ITU-GSMA Asia-Pacific Digital Societies Policy Forum 2017, held in Bangkok, Thailand on 8-10 May 2017, welcomed about 160 participants from over 20 countries in the ASP region. The forum addressed emerging digital services towards the age of 5G.

- The International Satellite Symposium 2017 was held in Bangkok, Thailand during 31 August to 1 September 2017 and was preceded by a one-day workshop. The Symposium was hosted and co-organized with the NBTC Thailand with support from the Australian Government and partners. About 90 people from over 20 countries attended the Workshop, and over 170 people from more than 30 countries participated in the Symposium.

- Technical assistance was provided to Sri-Lanka to develop technical RFP for an island-wide centralized automated RF monitoring system.
- Enhanced capability of the Ministry of Information and Communication of Bhutan on Consumer Protection Framework for ICT Sector on 18–21 July 2017.
- ITU - TRAI Asia-Pacific Regulators' Roundtable and ITU-TRAI International Training Program were held on 21-25 August 2017 in New Delhi, India, resulting in improved policy and regulatory capacity and skills of participants as follows:
    o 50 participants from 24 countries for the Regulators Roundtable
    o 94 participants from 20 countries for the International Training Program
    o Enhanced regulatory cooperation and consensus on key regulatory issues through Outcome Report.
- Enhanced awareness and regulatory collaboration amongst ICT and Financial stakeholders in Mongolia through a workshop and study that focused on cross-sectoral policy and regulatory collaboration in the area of digital financial services and digital financial inclusion
- The ITU Asia Pacific Centre of Excellence Training on "Collaborative Cross-sectoral Regulatory Mechanisms and Competition Analysis in Digital Economy" (7-11 August 2017, Bangkok), organized by the ITU, the National Broadcasting and Telecommunications Commission (NBTC) of Thailand, and the Ministry of Digital Economy and Society (MDES), built the capacity of 36 participants representing 13 countries across Asia-Pacific (excluding 5 presenters).
- The ITU partnered with the Infocomm Media Development Authority of Singapore to build capacity of 16 participants from 16 countries in the area of regulation while sharing the Singapore Experience.
- Helped CIS Member-States to understand and discuss best practices of policy making and regulation to enable digital economy at an ITU Regional Workshop, which was held in Moscow, Russia and attracted 49 participants from 12 countries.
- The ITU Asia-Pacific CoE workshop on "Implementing E-application strategies for telecom sector growth in the Pacific" organized in partnership with PITA, DoC (FIJI), DoCA (Australia) and MDES (Thailand) built capacity of 65 participants from 13 countries in the area of telecom strategy, e-applications and platform development with specific reference to the Pacific.
- Publishing of two Case Studies on the Digital Ecosystem and the ICT massification in Bolivia and Panamá, which provide strategic recommendations to support these countries to identify the main paths for the development of the sector, especially in the definition of public policies and initiatives that promote the deployment of broadband infrastructure, investments in the sector and innovation.
- Preparation of the Case Study on the Digital Ecosystem and the ICT massification in Nicaragua, which will be published in 2018.
- Publishing of the study on Measuring the Independency of the Regulatory Agencies using the Gilardi Index for the REGULATEL countries members.

WTDC	Resolutions 1, 9, 17, 21, 23, 30, 32, 43, 48, 62
PP Resolutions	PP Decisions 5, 13, PP Resolutions 25, 71, 102, 135, 138, 154, 165
WCIT	Resolution 3
WSIS Action Line	WSIS Action Line C6 of the Geneva Plan of Action and §§ 112-119 of the Tunis Agenda for the Information Society
Contributing to SDG Targets	SDGs: 1 (targets 1.1, 1.2, 1.3, 1.4, 1.5, 1.a, 1.b), 2 (targets 2.3, 2.4, 2.c), 3 (targets 3.8, 3.d), 4 (targets 4.3, 4.4, 4.5, 4.7, 4.c), 5 (targets 5.1, 5.b), 7 (targets 7.a, 7.b), 8 (targets 8.2, 8.3, 8.9, 8.10), 9 (targets 9.1, 9.3, 9.5, 9.a, 9.c), 10 (targets 10.3, 10.c), 11 (target 11.1), 12 (targets 12.8, 12.b), 13 (target 13.3), 16 (targets 16.6, 16.7, 16.8, 16.10, 16.b), 17 (targets 17.6, 17.8, 17.9, 17.14, 17.16, 17.17)

2.2   Telecommunication/ICT networks, including conformance and interoperability and bridging the standardization gap

- Enhancements to the ITU ICT Infrastructure Maps (http://itu.int/go/Maps). The ITU Maps presents critical ICT infrastructure on info highways broadband backbone (e.g. optical fiber, microwave links, satellite earth stations, and submarine cables). The Map interface is going to be renewed to allow new data visualizations and analytics; a Request for Proposal has been realized and procurement process was concluded in September, the following have been provided: graphical improvements proposals, wireframes for smartphone and tablet applications, dashboard and statistics, video and demonstrations for events are still under development. At the time of this reporting, the Map presents information from 406 operator networks and 19,170 nodes worldwide. The research on the transmission links has reached 13,010,406 km of routes, of which 3,101,414 km of info-routes have been imported to the Map. A New webpage, additional layers (IXPs in collaboration with Telegeography) and 3 interactive dashboards (distance, population reach, and hub analysis) have been added, submarine cables and satellite earth station information have been updated. The addition of three additional infrastructure layers on mobile coverage (2G, 3G, and 4G) will be concluded by the end of the year.

- As the sole facilitator of WSIS Action Line C2, BDT is leading activities on Information and Communication Infrastructure focusing on the achievements of the SDG 9 (infrastructure, industry and innovation). During the WSIS Forum 2017 two major events, the Workshop on mapping infrastructure Gaps and the Action Line C2 Facilitation Meeting, took place with around 40 participants and 6 presentations in each event.

- A revision of the report on the Implementation of Evolving Telecommunication/ICT Infrastructure for Developing Countries: Technical, Economic and Policy Aspects were developed and shared with all participants of the ITU-D Study Groups. This revision added to essential telecommunication/ICT infrastructure and their technologies information on IoT standardization process and concepts, spectrum, and broadcasting. The report makes reference to more than 200 ITU publications (e.g. ITU-D Study Group Reports, ITU Guidelines, and ITU Recommendations from all Sectors). A Report on ICT Infrastructure mapping to the achievement of SDG 9 is ongoing.

- Until the beginning of 2017 Spectrum Management Master Plans were provided within the framework of an ITU-Ministry of Science, ICT & Future Planning (MSIP) (Republic of Korea) project for countries in ASP (Brunei, Bangladesh, Pakistan, Thailand, Fiji, and Samoa) and in the Caribbean (Grenada, Jamaica and Saint Vincent and the Grenadines).

- Basic Spectrum Management System Project was launched for developing countries' spectrum management framework setup. Assistance to Comoros and Bolivia is ongoing.

- New version for SMS4DC, 5.1, was launched and further development of SMS4DC project has started to upgrade administrative and radio communication engineering function.

- Regional Seminar for Europe and CIS on "Spectrum Management and Broadcasting was held with around 70 participants" in Rome on 29-31 May 2017. In 9 sessions, 45 presentations were delivered on, among others, the Future of digital terrestrial television broadcasting, Digital dividend utilisation, IMT 2020 (5G), Spectrum needs of IoT, etc.

- Expert workshop on EMF issues for 5G implementation was organized in Rome on 2-3 November 2017 with around 40 participants.

- Assistance on conformity and interoperability has been provided to developing countries. A C&I Assessment Study has been developed for South America region, and 9 out of the 10 South American countries took part on it. Regional training events have been organized together with testing laboratory partners for AMS, ASP and AFR.

- Collaboration between an ITU Academia member in the Americas Region, CPqD with ITU and Caribbean Stakeholders in regard to homologation and testing procedures. A high-level Caribbean mission visited the laboratories of the CPqD in Campinas, Brazil, on 13-17 November, 2017 to follow and validate testing

of devices; ITU and Caribbean Stakeholders are presently assessing and testing the best procedures and processes for shipping equipment to Testing Centres, like CPqD, in order to be tested.

- The Government Wide Area Networks (G-WAN) Study for Dominica to facilitate the planning, designing and implementation of a comprehensive, secure IP-based Government wide area network has been completed. This completes the three studies which were done for Dominica, Grenada and St. Kitts and Nevis. The study was done in collaboration with CTU.

- Enhanced knowledge in Conformance & Interoperability for Africa with a training held in Tunis in May 2017. 8 participants from 6 countries participated in the training in Regulatory framework and practical EMC tests.

- Assistance to Member states on Future Internet Exchange & IPv6-based broadband: Final Improvements for Future Internet Exchanges Publication and Publication on Future Internet Exchange.

- Assistance to Member States on IPv6-based broadband (Business Model, SWOT Analysis, Policy and Strategy).

- Implementation of Broadband Wireless Networks to connect Schools and Hospitals in rural and remote areas in Burundi, Burkina Faso, Djibouti (operations). The installations are ongoing in Rwanda, Swaziland and Mali.

- Assistance to Member States on the Development of Broadband Access is ongoing for CIS countries: Web-based software for selecting the most feasible solution for broadband deployment in CIS and Georgia based on information about specific location in CIS and Georgia (city, settlement, etc.).

- A digital switch-over database was updated based on information from around 15 countries (see http://www.itu.int/en/ITU-D/Spectrum-Broadcasting/Pages/DSO/Default.aspx).

- Broadband Wireless Network in Africa – DJIBOUTI: Field Installations (final phase) and last shipment completed.

- South-Sudan final document on broadband.

- New Broadband Wireless Connectivity Model taking into consideration the Migration strategy to NGN in Swaziland (4G LTE in collaboration with Huawei) and discussions with Lesotho and Burkina Faso took place in order to cooperate by acquiring their equipment at a reasonable price in the benefice of Burkina Faso.

- Broadband Wireless Network in Africa – MALI: Administrative process and Needs Assessment.

- Broadband Wireless Network in Africa - BURKINA FASO: Tender Process for E-Learning.

- The pre-feasibility study to enhance ICT infrastructure for East African Community (EAC) to support the EAC-ITU- China Project was completed for the 3 components: Enhanced Broadband and connectivity infrastructure in East African Community, Regional E- transactions platform for e- government and e-commerce, and Centre of Excellence in ICT research and Innovation. A preliminary report was presented to stakeholders, including the Ministers of Rwanda and Uganda and the ITU SG during the Transform Africa Summit, held in Kigali, Rwanda on 10 May 2017.

- Within the framework of the ITU-Latin-American Development Bank (CAF), a summary report on the digital broadcasting roadmaps, which includes all beneficiary countries, has been prepared.

- Diagnosis and updating of National Technical Plans of Radio Broadcasting in the Republic of Colombia are currently under development.

- Diagnosis and audit to the process of assignment of spectrum by objective selection in the Republic of Colombia are currently under development.

- AMS RI 3 on Development of broadband access and adoption of broadband achieved to date the following results: provision of assistance for the development of guidelines for sustainable broadband infrastructure in rural areas; delivery of studies on broadband; capacity building activities; support for the establishment of Community ICT Centers; support to South American countries in terrestrial optical

cable systems; and the formulation and development of national broadband policies to implement a broadband technology framework.

- Members' capacity was built on the latest developments in digital terrestrial television, IPv6, and SMS4DC through workshops, trainings, and direct assistance.

- Assisted Djibouti in the feasibility study for the establishment of a Regional Internet Exchange Point (IXP).

- During the first semester of 2017, ITU-AMS assisted Guatemala in the establishment of the interim executive committee and definition of the model of the national IXP. In addition the coordination of the physical implementation of the first national IXP started in this period.

- Enhanced Capacity of over 260 delegates from Arab countries in the fields of spectrum management and frequency planning and coordination through the organization of the 3rd Annual MENA Spectrum Management Conference, held on 24-25 January 2017 in Dubai, in partnership with Forum Global and TRA United Arab Emirates. This event was followed by the ITU workshop on Cross-Border Frequency Management in Arab States on 26 January 2017 in Dubai, UAE.

- BDT and BR have been collaborating towards the support on Cross Border Frequency coordination for AMS countries in 2017. Within this exercise of frequency coordination, ITU organized 2 coordination meetings in 2017: Managua, Nicaragua, 8-10 March 2017 - Guatemala City and Guatemala, 28 August - 1 September 2017. And other 2 other meetings are foreseen for 2018. For the time being 21 iterations in UHF and 8 iterations in VHF have been made by the BR taking into account the respective submissions of digital requirements from the participating countries. 21 out of 30 participating Administrations submitted their digital requirements in the UHF band at least once. For the VHF band the BR received submissions from 5 administrations: Bahamas, Guatemala, Honduras, Mexico, El Salvador and France. Regarding this exercise, more information can be found at: http://www.itu.int/en/ITU-R/terrestrial/broadcast/Americas/Pages/default.aspx.

- Within the framework of the activities and actions made related to radio topics in the Americas, ITU volunteered to participate in the ad-hoc group on 2030 ICT ALLIANCE FOR THE AMERICA strengthening the cooperation between ITU and CITEL, with emphasis on emergency telecommunications.

- Enhanced the skills of 80 delegates from seven Arab countries in the area of Technical, Regulatory and Policy Aspects related to "Broadband Networks in the Era of App Economy". This was during the ITU Arab Forum on Future Networks, held in partnership with CIFODECOM on 21-22 February 2017 in Tunis, Tunisia. 80 delegates from seven Arab countries attended the Forum, where challenges and opportunities of the new App Economy were presented and discussed.

- Enhanced the skills of 42 participants from the Americas (most from the Caribbean) and other regions (Egypt, Iraq, Indonesia, Switzerland, Saudi Arabia) on Spectrum Management: using the latest generation tools, carried our through the ITU Academy platform, in close cooperation with the Inter-American Telecommunication Commission (CITEL/OAS).

- The ITU Americas Centre of Excellence (CoE) for Spectrum Management, CINTEL, delivered 2 online training courses. The first training course was requested by the regulator agency from Ecuador (ARCOTEL) to enhance the skills of 10 professionals on Regulatory aspects of Telecommunications and Spectrum Management Services; and the second one was focused on the Fundamentals of Spectrum Management.

- Enhanced the skills of 26 participants from the Americas Region on the basic knowledge and concepts related to telecommunications networks, 4G, Advanced IMT, mobile communications, broadcasting, IP, NGN, as well as fundamentals and trends of the technological evolution. This online training course was delivered in close cooperation with the Inter-American Telecommunication Commission (CITEL/OAS) that supported the course by providing fellowships.

- The ITU Americas Centre of Excellence (CoE) for Broadband Access, INICTEL-UNI, delivered 7 online training courses in benefit of the Latin American countries, and counted on the attendance of 94 participants in the courses related to following topics: Optical Networks Technologies and NGN, LTE and LTE Advanced, 5G, Mobile Communication Systems and IPv6.

- The ITU Americas Centre of Excellence (CoE) for Digital Broadcasting, INATEL, delivered 2 online training courses in benefit of the Latin American countries for 16 participants.

- Country Assistances on development of framework for cross border RF interference management was provided to LAO P.D.R and Cambodia.

- Technical assistance was provided to Mongolia to develop Master-plan for spectrum Management.

- Assistance was provided to Timor-Leste on developing Spectrum Monitoring plan: Detailed report on developing Radio Frequency Monitoring capability delivered. National workshop on technical skill development of ANC (regulator) staff conducted. Skills of 12 technical engineers developed on RF monitoring.

- The "ITU Asia Pacific Centre of Excellence (CoE) online Training on Spectrum Management" was successfully held on 13–26 May 2017. 292 participants from diverse backgrounds, including Administrations, Regulators, Operators and academia (excluding presenters), registered (217 participated) for the course. The participants came from 49 countries, of which 20 were from Asia-Pacific region and 29 were from outside ASP region. Participation during the workshop was very effective, especially in the forums where over 770 posts were made on more than 50 topics in 2 weeks.

- 3 countries for three regions have been selected for assistance within the framework of the ITU-Republic of Korea project on Basic National Spectrum Management system.

- Coordinated the data collection and validation in the process of enhancing the Interactive Terrestrial Transmission Map in Europe, covering infrastructure of more than 90% of European countries.

- Assistance was provided to Nepal on updating National Radio Frequency Management Framework and draft Radio Law.

- 3rd Annual Asia-Pacific Spectrum Management Conference (2 - 3 May 2017) was conducted in partnership with Forum Global (over 200 participants), followed by ITU workshop on Managing spectrum in the age of wireless communication (3-4 May 2017) in Bangkok. The workshop was attended by 83 participants representing administrations, regulators, industry and operators.

- ITU-D SG1 Resolution 9 co-chair participation in ITU-R WP1B work, modified final report on efficient spectrum management and new broadcasting technologies.

- Relevant ITU activities on EMF (for all the three sectors) have been presented during the WHO International Advisory Committee Meeting on the Non-Ionizing Radiation Programme 29-(30 June 2017).

- The "ITU Asia Pacific Centre of Excellence Training on Internet and IPv6 Infrastructure Security Program" (8-12 May 2017 at TOT Academy, Nonthaburi, Thailand) built capacity of 35 participants from across the Asia-Pacific in the area of IPv6 and Internet Infrastructure Security. The training workshop was organized by the ITU, the Ministry of Digital Economy and Society, Thailand and the APNIC with support from the IEEE Comsoc and the TOT Academy.

- A workshop on IPv6 Deployment and IPv6 Security Workshop was held on 19-21 June at Thimphu, Bhutan, in partnership with Department of Information Technology and Telecommunication (DITT) and APNIC. The workshop was supported by ITU-DoCA (Australia) project. The workshop was attended by around 50 participants from government, regulators, industry and academia. Following the workshop, consultations on IPv6 roadmap development were also held with key stakeholders in Bhutan.

- More than 30 participants raised their awareness on Conformity and Interoperability (C&I) for 4G LTE through the ITU Asia-Pacific CoE online distance learning programme organized in partnership with CAICT.

- Enhanced regulatory capacity to develop cost modeling tool for promoting affordable access of voice and data services by building the regulatory capabilities of Bangladesh Telecommunication Regulatory Commission (BTRC), 5-8 June 2017 and November 2017 and delivered the cost models to the BTRC.

- Built capacity and awareness of 41 participants under ITU ASP COE Training on Conformity and Interoperability for 4G LTE from 30 October-3 November, 2017 Shanghai, China.

- The V Latin-American Telecommunications Congress was jointly organized with GSMA LA, ASIET and CAF from June 19 to 22 in Cartagena, Colombia. More than 500 people attended the Congress. In a poll

distributed to 150 attendees, the panel organized by the ITU ranked second (out of seven) under the category "Which was the most relevant panel?".

- Improved regional collaboration on regulatory, economic and technical aspects of post-NGN, 4G and 5G and facilitated dialogue between policy-makers, regulators and the private sector during an ITU Regional Conference, which was held in Kiev, Ukraine, on 7-9 June 2017 and which was attended by 125 participants from 7 countries.

- ITU C&I Assessment Study for South America was finalized and the study/results were presented to countries during a workshop, 3-4 July 2017. ITU Conformity and Interoperability (C&I) Week for the Americas Regions was organized in two parts: Workshop on the ITU C&I Assessment Study for South America, from 3rd to 4th July, and Training for AMS Region on C&I Infrastructures and Virtual Laboratory Services, from 5th to 7th July 2017, both events were held in Campinas, Brazil.

- ITU has continued supported COMTELCA for the establishment of a Mutual Recognition Agreement in the sub region countries (Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua and Panama), to work in progress concepts of virtual labs and supranational certification body. COMTELCA decided to move forward with the MRA in 2018.

- The ATU RPM for WTDC-17 was organized in Victoria Falls Zimbabwe. 33 countries were represented. African common proposals on BDT contribution to the Strategic plan, Rules of Procedure, Declaration and regional initiatives were approved as well as candidacies for positions to TDAG and SG1 and SG2 were registered.

- The ATU RPM for WRC-19 was held in Dakar 10 to 16 September. 150 delegates from 40 countries attended the event and African groups were established in relation with WRC-19 agenda items.

- A national workshop for DRC on Spectrum policies was organized 19 to 22 September in Kinshasa by GSMA with the participation of ROA. New Frequency Allocation Table was developed.

- Coordination between Gabon and Equatorial Guinea for AGEOS earth Stations to be notified to BR was made with ROA assistance, 25 and 26 September at the request of ANINF, Gabon.

- Specific Assistance on Spectrum Management delivered in Spanish to Equatorial Guinea during one week training in Malabo 24 to 30 September.

- Assistance on Standards and C&I was given to SADC Members in a CRASA(Communications Regulators Association of Southern Africa) Electronic Communication Committee meeting held in Zambia 7-9th August 2017.

- C&I Week for Americas: Workshop to present the Assessment Study for South America (3-4 July) 9 from 10 countries participated in the study; and the C&I training (5-7 July) 15 participants from 9 countries.

- ANE Congress, Global Forum and ITU workshop participation and presentation, Bogotá, 5-8 September. 200 participants from 20 countries on the Global forum and 55 (from 13 countries) on the Workshop.

- Assistance provided to Seychelles on Spectrum Monitoring tenders. The report has been prepared and submitted to Seychelles.

- ITU-Academia Partnership Meeting: Developing Skills for the Digital Era, 19-21 September, Budapest. There was a special session on possible cooperation on spectrum management, especially in SMTP. 90 participants from 32 countries, including 37 universities.

- Contribution was provided to the accreditation of the SMTP during the meeting with ZeVA on the 5th of December 2017

- The Pacific Media Partnership Conference (PMPC) was held during 15-17 August 2017 in Solomon Islands. PMPC was jointly organized by ABU and ITU and hosted by the Solomon Islands Broadcasting. It was attended by about 51 people from 20 countries of which 10 countries are from the Pacific region.

- The "ITU Asia Pacific Centre of Excellence (CoE) Training on Spectrum Engineering and Cross border RF coordination", was successfully held from 11 – 15 September 2017. 44 participants (excluding 9 speakers and around 15 SRMC staff involved in organization of the event) from Administrations, regulators and industry thereby representing 15 ITU member states.

- The ITU Asia Pacific Centre of Excellence Training on "Broadband Mobile and Internet of Things Network Planning", was successfully held from 19-22 September 2017 in Bangkok, Thailand. The training workshop, which was organized by the ITU, the National Broadcasting and Telecommunications Commission (NBTC) of Thailand and the Ministry of Digital Economy and Society (MDES), built capacity and skills of 75 participants representing 10 countries across Asia-Pacific (excluding 4 presenters) in the area of 5G and IOT network planning.

- The ITU Asia Pacific Centre of Excellence Training on "Internet of Things: Technology, Standards and Planning", was successfully held from 8-11 July 2017 in Tehran, I.R. Iran. The training workshop, which was organized by the ITU, the Faculty of ICT (Ministry of ICT, I.R. Iran) and the China Academy of ICT (CAICT), built capacity of 72 participants representing 5 countries (excluding presenters) in the technical aspects of IOT.

- Facilitated experience exchange and capacity building on broadband technologies at an ITU Regional Workshop, which was held in Odessa, Ukraine, on 27-29 September 2017 and gathered 51 participants from 10 countries.

- Within CIS RI4 developed a tool that helps to select the most feasible solution for broadband deployment in all cities and settlements in CIS and Georgia https://broadbandcalculator.online

- The ITU ASP CoE training on "Deployment of Broadband through Next Generation Networks", held from 6-10 November 2017, Ghaziabad, India built capacity of 12 participants in the area of broadband networks and NGN.

- The ITU-NBTC Training on "Building IoT solutions for e-applications", held from 27-30 November 2017 (Bangkok, Thailand) built capacity of more than 50 participants in the area of IOT research and applications.

- Helped to coordinate spectrum management practices at the Regional Spectrum Management Conference and Regional Workshop on Practical Use of Radio Regulations, held in Yerevan, Armenia on 12-15 December 2017. The events attracted 150 delegates from 20 countries.

WTDC	Resolutions 1, 9, 10, 11, 13, 17, 18, 20, 21, 22, 23, 25, 30, 32, 35, 37, 39, 43, 47, 48, 50, 51, 52, 57, 62, 63, 77 Recommendations 17, 19, 22
PP Resolutions	PP Decisions 5, 13 PP Resolutions 25, 71, 101, 123, 176, 177, 178, 203
WRC	Resolutions 12, 55, 212, 223, 224, 238, 908 Recommendation 207
WTSA	Resolutions 17, 20, 29, 44, 64, 72
WCIT	Resolution 5
WSIS Action Line	WSIS Action Lines 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.
Contributing to SDG Targets	SDGs: 1 (targets 1.a, 1.4), 4 (targets 4.4, 4.6, 4.a, 4.c), 6 (targets 6.5, 6.a, 6.b), 7 (targets 7.1, 7.b), 8 (targets 8.2, 8.5), 9 (targets 9.1, 9.4, 9.5, 9.a, 9.b, 9.c), 11 (targets 11.1, 11.5, 11.a, 11.b), 17 (targets 17.3, 17.5)

2.3   Innovation and partnership

- Partnership in the ICT ecosystem: Partnership and resource mobilization enhanced through direct contacts, networking and meetings. In 2017, 58 new partnership agreements were signed with various stakeholders: multi-thematic (20), on ICT Applications (12), on human capacity building (6), on

infrastructure (5), on emergency telecommunication (4), on digital inclusion (3), on cybersecurity (3), on e-waste (2), on regulatory and market environment (2), and on innovation (1). The beneficiary regions of these newly-signed agreements were: Global (33), the Americas (7), Asia-Pacific (8), Africa (4), Arab States (3), Europe (2), and CIS (1). The BDT internal database on partnership agreements have been enhanced to support BDT resource mobilization efforts and to facilitate identification of potential partners. BDT pays particular attention at nurturing relationship with existing partners and engaging with them in lasting relationship. In addition, BDT also recognizes the importance of widening and diversifying its partners' base through outreaching activities towards nontraditional partners. Therefore, in a convergent ICT ecosystem, entities from other sectors are becoming new BDT partners, such as Pierre Fabre Foundation for projects in m-health or International Solid Waste Association for projects related to e-waste.

- ITU has been working in alliance with PAHO during 2017 on updating a study on successful experiences on e-health in the Americas region and in replicating successful e-health initiatives.

- Sponsorship Opportunities: In 2017, a new interactive sponsorship platform, available in the six ITU official languages, has been launched for social and side-events activities taking place at the occasion of BDT organized events. Opportunities were opened for Study Group meetings, GSR-17 Side-events, WTDC-17 Side-events as well as ITU-D 25th Anniversary. This website/portal proposes opportunities to entities to enhance their visibility, promote brands, and showcase ICT products and solutions. Discounts are offered to ITU-D Membership for open events/meetings as well as for multiple sponsored activities. All resources mobilized are used to organized activities sponsored and to implement activities, projects and initiatives, including the regional initiatives, in the framework of the WTDC-14 and WTDC-17 Action Plans. Out of the 58 newly signed agreements during the period, 14 were sponsorship agreements related to GSR-17, ITU-D 25th Anniversary and WTDC-17 Side Events.

- Following the 7th Private Sector Chief Regulatory Officers' (CRO) and the establishment of the CRO Working Group on Digital Financial Inclusion (CRO WG-DFI) on 14-15 November 2016, Bangkok, Thailand, coordination with identified countries (i.e. Mongolia and Sudan) and relevant stakeholders from the financial and ICT/telecommunications public and private sector entities was kicked-off in 2017. Several CRO WG-DFI e-meetings took place and assessment missions to Mongolia and Sudan were carried out by end June 2017 for which the outcomes were presented at the 8th CRO and CRO WG-DFI meetings at GSR-17 demonstrating the need for enhanced collaboration between financial and ICT/telecommunication regulators to achieve UFA. A Public – Private Roundtable on Partnering for the SDGs was organized as a pre-event of WTDC-17 with over 100 participants from both sectors. Among other things, the roundtable highlighted CRO progress and outcomes, collected inputs and recommendations to further promote enhanced cooperation between Member States, Sector Members, Associates and Academia.

- Partnerships have been, and continue to be, fostered with Academia to promote the development of telecommunications/ICTs, in particular the introduction of new technologies and promotion of ICT innovation, including through the development of studies and platforms for increased engagement with Academia

- As a side event to WTDC-17, on ACADEMIA ④SDGs was also held at WTDF-17 with over 100 participants to present and discuss academic work and research to innovative solutions accelerating sustainable development. The Impact Study on ICT④SDGs was finalized and the book "ICT-centric economic growth, innovation and job creation", was launched at WTDC-17. This was a collaborative project leading scholars and experts from around the world, addressing the challenges and opportunities offered by ICTs in the areas of innovation, governance, education, job creation and economic growth. It presents an in-depth roadmap for sustainable economic growth by exploiting the recent developments in Information and Communication Technology (ICT) and creating an environment that nourishes ICT-centric innovation and generates new employment opportunities.

- National Innovation workshop conducted during country reviews has brought together multi-stakeholders and multi-sectors to co-create contributions to foster national digital innovation policies in Rwanda on 23 and 24 February, 2017.

- National workshop and Innovation ecosystem stakeholders' consultations were held throughout the process of the country reviews for Kenya to help strengthen the ICT centric innovation ecosystems. BDT presented the preliminary outcome of the study on 24 March, 2017 in Nairobi, Kenya.

- National ICT innovation ecosystem stakeholder consultations held from 13 to17 March in Buenos Aires, Argentina. This technical assistance is being provided to Argentina with aim to strengthen the startup ecosystem and ICT SMEs and improve their competitiveness.

- First regional innovation forum was held on 28 and 29 March in Chisinau, Moldova, as a joint initiative between EUR and CIS regions. The expected outcome was to share challenges and opportunities, discuss good practices, and offer a platform for twinning, networking and learnings of ongoing and planned country level initiatives on Innovation.

- National stakeholders' workshop and additional interviews for the country review of the ICT centric innovation ecosystem for Moldova were held from 12 to 19 May, 2017 in Chisinau, Moldova.

- Innovation track was successfully delivered for the WSIS Forum 2017 where startups and government policy makers met in order to strengthen digital industries and innovation capacity and leverage investment to bridge the innovation divide.

- The Innovation toolkit <Bridging the Digital Innovation Divide> for strengthening ICT-centric ecosystems was launched during a session in the WSIS 2017 innovation track. This toolkit has been developed to help countries develop a Digital Innovation Framework, a set of policies and projects that foster national innovation.

- Using the toolkit, BDT has trained over 40 national or regional experts representing 20 countries and certified 30 of them.

- An Executive regional executive workshop, on bridging the digital innovation divide, was organized in cooperation with the Regional Cooperation Council (RCC) and International Center for Promotion of Enterprises (ICPE) within the framework of the ITU EUR5 RI, in Ljubljana, 12-13 September 2017, gathering of about a dozen stakeholders from European countries , and 6 countries in Europe were equipped with skills to champion / lead a national reviews on the ICT centric innovation ecosystems and develop coherent approaches to move their respective countries towards an innovation driven economy.

- A multi-stakeholder global workshop, on bridging the digital innovation divide, was organized on the sideline of ITU telecom in Busan, 26-28 September, with representatives from 8 countries who were equipped with skills to champion / lead a national reviews on the ICT centric innovation ecosystems and develop coherent approaches to move their respective countries towards an innovation driven economy.

- A multi-stakeholder regional workshop on Bridging the Digital Innovation Divide: Accelerating Digital Transformation towards the 4th Industrial Revolution, was held 11-12 December 2017 in Gaborone, Botswana. Workshop was held in collaboration with SADC secretariat and attended by representatives from several SADC countries and over 20 participants.

- BDT also held a side event during WTDC-17 on the Digital Economy: Accelerating Digital Transformation, in October 2017 in Buenos Aires.

- Finalization of the three priority projects of the Arab Technology Incubators and Techno parks Network (ARTECNET) during the meeting of the Working Group held at the Smart Village, Egypt, on 18-20 April 2017, attended by 15 participants from 9 countries.

- ITU together with Busan Metropolitan City organized the 4th Young ICT Leaders' Forum in conjunction with the Telecom World 2017 in Busan, Republic of Korea, during 27-29 September 2017. Over 200 participants from more than 30 countries worldwide participated in the Forum. The Forum also hosted Busan Global Smart Cities Challenges which presented 5 awards to winners.

- Enhanced awareness of 35 participant about the methods and tools used by other countries resulting in more inspired and motivated trainers who would improve the training they provide for their employees

and students on ICTs for promoting Innovation & Entrepreneurship in Sri Lanka from 12-15 September 2017 followed by another training for Department of Agriculture in December 2017 further enhancing the skills of 40 officers by developing web interfaces and mobile app for Department of Agriculture Sri Lanka with support from TRCSL Sri Lanka. ITU together with Asia Pacific Telecommunity (APT) and Pacific ICT Regulatory Resource Center (PIRRC) conducted workshop on of Spectrum Management and Harmonized use of Spectrum Resource from 28-30th November in Nadi Fiji. The workshop was attended by 27 participants, representing 10 ITU member states (FSM, Fiji, Indonesia, Kiribati, PNG, Samoa, Solomon Islands, Timor-leste, Tuvalu, and Vanuatu), 1 regional organization (APT) and two other non-member states from the Pacific.

WTDC	Resolutions 1, 5, 30, 33, 50, 59, 71, 157
PP Resolutions	PP Decisions 5, 13 PP Resolutions 25, 71, 72
WSIS Action Line	WSIS Action Lines 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.
Contributing to SDG Targets	SDGs: 1 (targets 1.a; 1.b), 2 (targets 2.a, 2.c), 3, 4 (targets 4.a, 4.b, 4.3, 4.7), 5 (targets 5.b, 5.6), 8 (target 8.2, 8.3, 8.6, 8.10, 8.b), 9 (targets 9.5, 9.b, 9.c), 10, 11 (targets 11.1, 11.4), 12, 13 (target 13.3), 16, 17 (targets 17.1, 17.3, 17.9, 17.14, 17.16, 17.17)

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

3.1 Building confidence and security in the use of ICTs

- Launched the Gaming Booklet of the Child Online Protection challenge in partnership with the Ministry of Communications and Information Technology which contains a detailed description of the games that are applied during the challenge on 4 March 2017;

- Conducted Child Online Protection Challenge in Port Said, Egypt on 4 March 2017, in partnership with the COP National Committee in Egypt and other stakeholders. More than 60 students learned via gamification about the Internet safety.

- Caribbean School Cyber Security Awareness Programme promoted by ITU in 2017: designed to assist the Ministries of Education in the Caribbean to promote awareness in the safe use of ICT, anti-cyber bullying and general cyber security awareness in secondary schools. Three countries benefitted from the programme in the Caribbean in June (Belize, St. Kitts & Nevis, Guyana).

- Delivery of Cyber bullying Workshop sessions in St. Kitts & Nevis (35 participants) and Guyana (120 participants); Unanimous Satisfaction of Participants; in Belize Presentation workshop; review & consolidation of the Anti-cyber bullying School Policy manual (70 participants); above 85% satisfaction among stakeholders.

- The Cybersecurity technical Training and Cyberdrill for Suriname and for the Caribbean was organized from 3 to 7 July. The event counted with 99 attendees representing 8 Countries: Dominican Republic, Grenada, Guyana, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago , Montserrat (UK), Turks and Caicos Islands (UK), and USA.

- Organized in cooperation with the Arab Regional Cybersecurity Centre (ARCC) the Regional ALERT (Applied Learning for Emergency Response Teams) Cyber Drill — 5th Edition, held in Doha, Qatar, on 5-9 March 2017. More than 11 countries attended the drill with around 100 participants.

- The Drill was followed by two days training on 8-9 March 2017 conducted by Cyber Wellness Center (CWC) of the EC-Council. Participants divided into two tracks: Technical Track covered Web Vulnerabilities modules (SQAP) and Management Track covered Chief Information Security Officer (CISO) modules. Trainings were preceded by pre-assessment tests and followed by post assessment tests.

- CIRT Readiness Assessments were performed for Republic of Mali, 20-23 March 2017 and for Namibia, 19-21 April 2017 with the involvement and awareness building of stakeholders in the country. The assessment will facilitate the planning and implementation of CIRT in Mali and in Namibia.
- Raised awareness and developed guidelines on Child Online Protection (COP);
- Selected countries were assisted in establishing their national CIRTs and regional cybersecurity drills were conducted to test readiness of CIRTs and strengthened optimal coordination between Arab CIRTs.
- In terms of technical and policy frameworks, a regional study was conducted on "Cloud Computing in Arab Countries: Legal and Legislative Aspects, Facts and Horizons" to help define the legal measures that ensure data privacy and secure use of the Internet and its various applications.
- Assisted Sudan in the development of its national child online protection strategy framework in 2017;
- Awareness was raised among 100 school students regarding the Internet safety through the organization of the Child Online Protection Challenge in Port Said, Egypt on 4th March 2017, in partnership with the COP National Committee in Egypt and other stakeholders.
- The ITU developed National Cybersecurity strategy (NCS) for Mauritania for the period 2017-2022, preceded by a workshop to assess the current cybersecurity status through consultation with the national stakeholders, with planned work on CIRT implementation with potential funding by both ITU and host.
- Built capacity among the cybersecurity professionals in Djibouti through the Arab Regional Cybersecurity Centre (ARCC) by conducting two weeks' training that covered the "Web Security Attacks and Solutions" on 14-18 May 2017 and the "Vulnerability Assessment Penetration Testing Training" on 21- 25 May 2017;
- Organized a workshop on "Cybersecurity and risk assessments in practice" during the ITU-D Study Group 2 Meeting in January.
- Launched the 2nd edition of the Global Cybersecurity Index. The index aims at measuring the level of commitment of Member States to cybersecurity.
- Cybersecurity Symposium and Technical Training for Uruguay and the Americas Region (26-29 September 2017), with 84 participants from 14 countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Jamaica, Mexico, Panama, Paraguay, Peru, and Uruguay.
- Organized in partnership with CTO a national workshop in Swaziland to draft the cybersecurity maturity review and national cybersecurity strategy for Swaziland.
- Supported the 5th Central European Cybersecurity Public-Private Dialogue Platform held from 14 to 15 September 2017 in Sibiu, Romania.
- During the Americas Cybersecurity Regional Symposium, BDT organized the Fifth Cyberdrill Applied Learning for Emergency Response Teams (ALERT), 26-29 September, Montevideo Uruguay.
- Cybersecurity in the Pacific Island project was signed in September together with the Government of Australia to assist 4 countries in the Pacific Islands on establishing National CIRTs.
- A project was signed with Zimbabwe to establish a National CIRT.
- Enhanced Capacity of National Telecommunication Authority (NTA), Nepal, as well as the law enforcement agencies in cooperation with the UNODC and Interpol was conducted on 7-11 August 2017. The draft Cybercrime Legislation for Nepal was prepared.
- ITU Regional Workshop on Cybersecurity for CIS provided a platform for experience exchange and learning recent notable cyber-attacks in the region and ways to combat them. The Workshop was attended by 56 participants from 8 countries.
- The Child Online Protection in ASEAN Conference was organized by MCMC Malaysia in cooperation with ITU on 5-6 December 2017 in Malaysia.
- The FIRST-ITU Regional Symposium & Cyber Drill for Africa and Arab Regions, was held in Dar Es Salaam, Tanzania, 13 –17 November 2017. 20 countries attended the conference and drill with around 180 participants.

- The cyberdrill, followed by a High Level Simulation on cybersecurity related risks for the Government of Tanzania, took place on 20-21 November. 20 CEOs and 4 Permanent Secretaries actively participated.
- The ITU ALERT cyber drill for Europe and CIS Regions, was held the 21-23 November 2017, in Chisinau, Moldova. 26 countries attended the drill with around 180 participants.
- A CIRT assessment for the institutions of Bosnia and Herzegovina was carried out in Sarajevo, the 26-28 November 2017.
- A regional training on Threat intelligence was held in Cotonou, Benin from 11-15 December 2017.
- A regional workshop "Key Aspects of Cybersecurity in the Context of Internet of Things (IoT)" was held in Tashkent, Uzbekistan on 18-19 September 2017 and gathered 56 participants from 8 countries.

WTDC	Resolutions 1, 5, 9, 15, 30, 33, 37, 45, 50, 59, 64, 67, 69, 78, 79
PP Resolutions	PP Decisions 5, 13
	PP Resolutions 25, 71, 72, 130, 179, 181
WTSA	Resolutions 50, 52, 58
WSIS Action Line	WSIS Action Line C5
Contributing to SDG Targets	SDGs: 1, 3 (target 3.5), 4 (target 4.a), 5 (targets 5.2, 5.3, 5.b), 7, 8, 9, 10 (target 10.2), 11, 16, 17

3.2   ICT applications and services

- A new joint effort was launched with WHO African Region during the First WHO Africa Health Forum that took place in Kigali, Rwanda on 27-28 June 2017 to scale up Digital Health services in Africa. The partnership will focus on building a capable workforce to effectively use ICT as well as addressing the need of multi-stakeholders partnership models that can bring about sustainable adoption of Digital Health.
- A Cooperation Agreement with FAO was signed to reinforce the working relationship on e-Agriculture issues and expand the scope and depth of activities. A Hackathon is planned to take place with FAO during the WSIS Forum 2018 under the theme "Hack against Hunger".
- A Regional e-Agriculture Strategy Workshop is under planning with FAO for the Caribbean region to take place early 2018.
- A model partnership agreement between different sectors (Health, Agriculture, Education, etc.) with ICT sector is under development to facilitate the creation of national and institutional agreements that can foster the scaling up of ICT for Development services leveraging public-private partnership.
- A side event was organized during WTDC-17 on eHealth.
- A joint UNESCO-ITU Mobile Learning Policy Review will be conducted in selected countries to review national ICT in education initiatives and produce a detailed report containing both an evaluation against international benchmarks and a set of policy recommendations based on good practices supported by evidence. Palestine was selected as a first country to start with.
- A Joint UNESCO-ITU "Policy Forum on Mobile Learning" was held on 24 March 2017 attracting over 300 participants and stressed on the importance of cross-sectoral collaborations in developing the necessary E-skills.
- A major agreement was signed with the European Commission and WHO to set up a mHealth Innovation and Knowledge Hub in Europe. The Hub will be collecting and disseminating research and experience related to the large-scale implementation of mHealth programs and support Member States in setting up large-scale mHealth programs.
- A meeting was held in Zambia to scale up implementation of mHealth involving all stakeholders, Ministry of Health, Ministry of ICT, ZICTA, Mobile Network Operators, WHO and ITU. Roles of each stakeholder were established.

- A bid for telemedicine was done in Zimbabwe. Technical evaluation took place but all bidders found to be short of requirement. A relaunch of tender was advised.

- An Expression of Interest EoI to solicit European institutes interest to host the EU mHealth Innovation and Knowledge Hub. 11 EoI were received from different 17 countries (both as individual and part of a consortium). A detailed Request for Proposals will be published to seek detailed proposals to select the European institute or consortium that will host the Hub.

- Assistance was provided to Zimbabwe through an infrastructure and equipment audit to extend telemedicine services in remote areas of the country, as well as in-country training.

- Assistance was provided to Senegal to develop their national eHealth Action Plan.

- A "Toolkit and Implementation Guidelines for a Digital Health Platform" was developed to guide decision makers and health planners in designing and implementing a national "digital health platform".

- A first draft of a Common ICT for SDG Platform was developed to provide an overall architecture of a common digital infrastructure that can deliver a set of integrated and cross-cutting services based on common standards and Enterprise Principles.

- A Letter of Intent was signed with WHO and UN-HABITAT to develop a joint programme on Smart Healthy Cities to identify champion cities around the world to create models for the use of ICT as a key enabler to transform health conditions in cities.

- Preparatory work and meetings on mDiabetes for Senegal with Ministry of Health, Ministry of ICT of Senegal, WHO and mobile telecoms operators for the preparation of phase 2 of the project completed during the 1st quarter of 2017. At the end of phase 1, the project registered the participation of 110,000+ users in its database.

- Work with Burkina Faso resulted in the decision to implement m-Cervical Cancer programme, and preparatory work was undertaken in March 2017 for the launching of the initiative scheduled for April 2017 in Ouagadougou.

- Built capacities of policy-makers regionally in formulating national strategies for smart learning through the implementation of the signed cooperation agreement with the Telecommunication Regulatory Authority of the United Arab Emirates and the Mohamed Bin Rashid Smart Learning Programme. The first capacity building workshop took place in Dubai on 26-28 February 2017 with the participation of 18 participants from 10 countries. The second Smart Learning Workshop was virtual and was held on the 6th of September 2017 with the participation of around 10 participants. The third workshop was held on 27 and 28 November 2017 with the participation of 7 participants from four countries.

- Enhanced awareness among policy makers in the Arab region on the means necessary to formulate national strategies relevant to smart learning by developing guidelines for this purpose in collaboration with Alecso, Intel and Millennium@EDU.

- In partnership with FAO, a number of activities were implemented in the area of e-agriculture including; a) the national e-agriculture strategy for Papua New Guinea was further refined and some of the priority solutions identified, b) the engagement with stakeholders towards its implementation was further strengthened. National consultation were carried out as part of the development of National E-agriculture Strategy for the Philippines, Department of Agriculture (Philippines) and Department of ICT (Philippines). c) In Fiji, a validation workshop was done for the draft E-agriculture strategy and consultation held on agromet solutions, and, d) The process for developing E-agriculture Strategy for Afghanistan was started.

- Enhanced regulatory capability to deal with suitable framework on Over-the-Top (OTT) Services for Vientiane, Lao PDR, on 19-23 June 2017.

- Increased regional collaboration on smart cities and improved understanding of the underlying technologies and related challenges at ITU Regional Workshop held in Samarkand, Uzbekistan, on 1-2 June 2017.

- Facilitated the exchange of experiences and discussed innovative solutions based on the Internet of Things and Future Networks technologies at an ITU Regional Workshop, which was held in in Saint Petersburg, Russia, from 19 to 20 June 2017 and which attracted 69 participants from 11 countries.
- Improved cooperation and facilitated dialogue on digital financial services between financial and ICT regulators, telecom providers and other private companies at an ITU Regional Forum on Digital Financial Services Development which was held in Astana, Kazakhstan, from 4 to 5 July 2017.
- Enhanced the skills of 93 participants from the Americas Region on "The role of ICT in the Smart and Sustainable Digital Cities". This online training course was delivered through the ITU Academy platform in close partnership with the Inter-American Telecommunication Commission (CITEL/OAS).
- The third edition of a joint ITU-SAMSUNG Regional Competition for Latin America and the Caribbean on "Mobile Applications for Accessibility" was carried out in 2017, awarding certificates to the winners of the two categories: (1) Ideas, solutions or projects that still need to be developed or that are under development, won by an academic entity from Argentina; and (2) Solutions to benefit people with disability that are already developed or available in the market, won by an academic entity from Brazil. This contest is primarily focused on developing innovative and creative solutions to benefit persons with disability (PwD), bringing more social inclusion and interaction, comfort and quality of life to their daily routine through mobile technologies.
- An ITU-Telecom Regulatory Authority of India (TRAI) training on "Leveraging ICTs for Smart Sustainable Cities" in addition to a national symposium on "ICT Regulatory challenges in Indian Smart Cities" held on 24-26 March 2015 raised awareness among more than 190 participants on the latest trends in smart city developments.
- The Study on "ICTs and Public Health in Latin America: m and e-health approach" documents a wealth of information sources on eHEALTH that can facilitate the design, implementation or replication of successful eHEALTH initiatives by different countries and to advance eHEALTH capacities. The study proposes a framework to conduct an assessment of countries' eHEALTH development, enabling their comparison and can be a milestone towards an eHEALTH readiness index. The study also delves into the work of 2014 "best practices of leadership, innovation and governance in e-health: the cases of Brazil, Mexico and Peru" prepared for the ITU. In 2017, the eHealth initiatives have become more visible and common in the region, the scope of the present study is broader and more focused on understanding the policies and national plans of e-health and m-health, processes and contexts in Brazil, Mexico, Peru, Argentina and Panama. As a result of their joint collaboration during 2017, ITU AMS and PAHO have agreed to work in a MOU to facilitate their joint collaboration in the future. The MOU is planned to be signed in 2018.

WTDC	Resolutions 1, 5, 30, 54
PP Resolutions	PP Decisions 5, 13
	PP Resolutions 25, 71, 72, 139, 140, 183, 202
WSIS Action Line	WSIS Action Line C7 of the Geneva Plan of Action
Contributing to SDG Targets	SDGs: 2, 3, 4 (targets 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7), 6, 7, 8 (targets 8.1, 8.3, 8.8), 9 (targets 9.1, 9.b), 11

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

4.1   Capacity building

- The 3rd Center of Excellence Steering Committee meeting for the Europe region was held in Copenhagen on 17 January 2017, which approved the work plan and training programme for 2017. In follow up, the training catalogue with Training Opportunities by European CoEs was released in March. Preparations have been finalized for the convening of Steering Committee meetings in all regions during the last quarter of 2017.

- The 5th meeting of the Group on Capacity Building Initiatives (GCBI) was held successfully from 8 to 9 February 2017. Members reviewed ITU's work on CB during the past year and provided guidance on the way forward.

- The online publication "Capacity Building in a Changing ICT Environment" was released. The first issue focuses on mobile technologies for skills development and lifelong learning. It features the work of an international team of experts, tackling the issues in an analytical, critical, and conceptual fashion.

- A Cooperation Agreement was signed with ARCTEL on the joint implementation of an Accelerated Management Course for Telecommunication Executives. The course aims to deliver high-quality and certified training for managers of the Communication Sector.

- The Report on Capacity Development in Internet Governance (IG) was finalized. It provides a detailed overview and assessment of existing IG capacity development activities globally and regionally and will be the basis for further work of ITU in this field.

- Under the framework of the ITU Academy's Centers of Excellence network, a total of 64 training courses were delivered between January-December 2017, with a total of 1551 participants from all over the world.

- Supported the development of the Quality of Service and Experience (QoS/E) Framework and draft QoS/E guidelines for the WATRA region.

- Development of training materials for the ICT and Climate Change Training Program was completed. The material will now undergo editing and should be available for delivery by the end of the year.

- The Spectrum Management Training Program (SMTP) underwent a complete review and update to ensure that the materials incorporates the latest developments in the field.

- The report on the development of the Internet of Things (IoT) training Program was completed. The program will contain total of 15 modules, 8 at the Foundational level and 7 at the advanced level. Experts were recruited to develop the individual modules. The modules should be ready by the end of April 2018.

- The Quality of Service Training for SADC was held in Gaborone, Botswana, on 8-10 May 2017. This training was attended by 106 participants from 8 SADC countries. Country case studies from this training are used as reference materials for the Quality of Service Training programme and as input into the QoS/QoE manual.

- The workshop on "Developing the ICT ecosystem to harness Internet-of-Things (IoT)" for the Africa region was held in Mauritius from 28-30 June 2017 and attended by 151 participants.

- Organized the Regional Forum on Internet of Things (IOT): Smarter Living in the Caribbean and Digital Financial Services (DFS) Workshop at HYATT Regency Hotel, Port of Spain, Trinidad & Tobago, on 24–26 April 2017 and 27–28 April 2017, respectively. 70 participants from 14 countries benefited from the Regional Forum on Internet of Things (IOT): Smarter Living in the Caribbean, and 90 participants from 14 countries benefited from the Digital Financial Services (DFS) Workshop.

- Organized Regional Training Workshop on "Satellite Communications for the Africa region, Arab region and the Caribbean. These workshops were organized under a partnership agreement with the international Satellite telecommunication organization (ITSO).

- Organized with BR and participated in the Radiocommunication seminar (RRS-17), held in Dakar from 27 to 31 March 2017. More than 120 radiocommunication experts were trained on BR tools for space and terrestrial services.

- Built capacity on KPI, Digital proofs and Security of Electronic Transactions for Arab countries participated in a regional training was organized in cooperation with CIFODECOM-Tunis. 14 participants attended the training.

- Enhanced skills on Fundamentals of Fiber and Optical Networks at a regional training organized in cooperation with CIFODECOM-Tunis on 30 January-2 February 2017. 16 trainees attended the training.

- Partnered with the Asia-Pacific Telecommunity (APT) in organizing the "Preparing for International Conferences, 2017" Training. The training was delivered in two phases (On-Line and Face to Face) from

30 January to 3 February and 27-30 March 2017, respectively.39 participants from 22 countries completed the online course, and 30 attended the face to face training.

- ITU in partnership with the Asia-Pacific Postal Union built capacity of 12 participants in developing postal e-strategies.

- Enhanced skills of Arab countries on Optical Networks Engineering, Installation and Deployment through a regional training organized in cooperation with CIFODECOM-Tunis on 13-15 April 2017. More than 11 participants attended the training.

- Built capacity 4G/5GPlanning and Deployment at a regional course organized in cooperation with CIFODECOM-Tunis on 16-18 May, 2017. 14 participants attended the training.

- Built capacity on identifying ICT project and business risks and provide structured process for the management of ICT Risk Management at regional training organized in cooperation with SUDACAD-Sudan, from 30 April-2 May 2017. Due to the high demand of this training, a second session was organized on 23-25 May 2017. More than 30 participants attended the training from Arab countries, of which 10 were women.

- On-line indigenous training course to ensure access to training and innovation through the design and implementation of pilot projects that allow the implementation of communication networks-managed and operated by indigenous peoples, through educational processes aimed at broadening the knowledge of participants on the use of ICTs for information and communication tools, digital content, virtual education development and e-commerce. The training benefitted over 150 indigenous from 16 countries of the Americas region (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Paraguay, Peru, Uruguay, United States and Venezuela). (http://www.itu.int/en/ITU-D/Digital-Inclusion/Indigenous-Peoples).

- Annual regional workshop on human capacity development for African countries, held in June 2017 in Port-Louis, Mauritius with 121 participants from 27 countries in attendance. The workshop provided the platform for the ICT professional from the public service, industry and academia to enhance their understanding on the Internet of Things ecosystems issues in Africa.

- Enhanced skills on IPv6 Certified Network Engineering through a regional training on IPv6 deployment organized in cooperation with SUDACAD-Sudan on 07-09 May 2017. The training aimed to explore the current and future IP technologies and its infrastructure. More than 15 participants from Arab countries attended the training.

- Capacity built on different aspects of Business Analysis for ICT projects on a regional training for Arab states organized in cooperation with SUDACAD-Sudan from 23-25 May 2017. The training was attended by more than 20 participants, 7 of which were women. Due to the high demand of this course, an online training was organize during the 07-18 August 2017. 43 participants attended the training and 10 of which were female.

- Within the framework of the partnership initiative with Telecommunications Regulatory Authority (TRA-UAE), a regional project was signed on human capacity building on IPv6 for Arab LDCs and Palestine. The project started its implementation in 2016 and 2 high and professional training activities were implemented in December 2016 and April 2017. The project aims to build human and institutional capacity to improve the technical skills in the development and use of IPv6, as well as to assist them to better deploy the IPv6. 28 participants from Arab LDCs and Palestine were trained and became certified IPv6.

- Ten ITU Asia-Pacific Centres of Excellence trainings were held in Asia-Pacific region on Spectrum Management, Internet and IPv6 Infrastructure Security, Conformity and Interoperability (C&I) for 4G LTE, IOT Technology, Standards and Planning, Collaborative Cross-sectoral Regulatory Mechanisms and Competition Analysis in Digital Economy, Spectrum Engineering and Cross border RF coordination, Broadband Mobile and Internet of Things Network Planning, Conformity and Interoperability (focus on IOT), Deployment of Broadband through Next Generation Networks, Implementing E-application strategies for telecom sector growth in the Pacific (detailed in other sections), and an online training on

OTN and PTN for broadband and high-speed services. Facilitated the exchange of experiences between capacity building professionals at an ITU Regional Workshop, which was held in in Odessa, Ukraine, from 12 to 14 April 2017 and which attracted 62 participants from 9 countries.

- The regional workshop on "Strengthening capacities in international Internet governance" was held in Brasilia, Brazil, on 14 August 2017. The workshop enhanced the capacity of 60 participants from countries in the Americas region on a wide range of topics and included a large number of different stakeholders from the global and regional Internet governance community.

- The ITU-Academia Partnership Meeting: Developing Skills for the Digital Era was held in Budapest, Hungary, on 19-21 September 2017. The meeting was attended by 88 participants from 32 countries, including 38 academic institutions representing all regions. The large majority of the participants came from academia, others from government, industry, Centers of Excellence and international organisations. The meeting contributed to enhanced cooperation between ITU and academic institutions, and between academic institutions and Centers of Excellence.

- Steering Committee meetings for the Centers of Excellence network were held successfully in all regions between November and December 2017. The meetings reviewed the activities and performance of the Centers during 2017, discussed challenges and how to overcome them, and agreed on the draft training catalogue for 2018.

- During the Internet Governance Forum 2017, an Open Forum on capacity building on Internet governance was organized, jointly with other stakeholders. The session discussed capacity building needs for policy makers (in particular in developing and least developed countries) and presented ongoing and planned activities in this regard by different stakeholders.

- Regional workshop dedicated to raising awareness of ITU activities in the CIS was held in Tashenkt, Uzbekistan on 27-29 November and attracted 58 participants from 9 countries.

WTDC	Resolutions 1, 5, 9, 15, 20, 21, 22, 30, 32, 33, 36, 40, 50, 59, 73, 77
PP Resolutions	PP Decisions 5, 13 PP Resolutions 25, 71, 72, 137, 139, 140, 176, 188, 189, 197, 199, 202
Council	Resolution 1143
WTSA	Resolutions 54, 59, 72
WSIS Action Line	WSIS Action Line C4 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.
Contributing to SDG Targets	SDGs: 1 (target 1.b), 2 (target 2.3), 3 (targets 3.7. 3.b. 3.d) , 4 (targets 4.4, 4.7), 5 (targets 5.5, 5.b), 6 (target 6.a), 8 (Target 8.2), 9 (targets 9.1, 9.b, 9.c), 12 (targets 12.7, 12.8, 12.a, 12.b), 13 (targets 13.2, 13.3, 13.b), 14 (target 14.a), 16 (target 16.a), 17 (target 17.9, 17.18)

4.2 Telecommunication/ICT statistics

- The latest edition of the ITU World Telecommunication/ICT Indicators Database and the ITU/World Bank joint publication "The Little Data Book on Information and Communication Technology 2017" were released in January 2017 and June 2017. The data will enable users to take informed decisions in the field of ICT, based on internationally comparable statistics.

- The Extraordinary Meeting of the EGTI/EGH took place on 1-3 March 2017. On 28 February, a meeting of the sub-group and independent consultant also took place. Two input documents (prepared by EGH/EGTI sub-group and Pyramid/Global Data) were discussed during the meeting. The meeting adopted a total of 14 indicators to be included in the IDI compared to the current list of 11 indicators. The results of the new IDI will be published in 2018, to provide sufficient time to undertake statistical tests and to allow sufficient time for countries to gather and report data on the newly included indicators.

- The 2017 short questionnaire data collection was completed. Around 164 countries submitted their responses to the WTI Short Questionnaire 2017. 114 countries responded to the ICT Household Short Questionnaire 2017, which is a significant increase from 2016 (67 countries).

- The "ICT Trends and Developments" reports for the Americas region, Asia and the Pacific and Europe were completed as an input to the Regional Preparatory Meetings (RPMs). The reports enabled the ITU membership to assess ICT trends in their regions, as a basis for discussions at the RPMs.

- The National Workshop on ICT Indicators was held in Huye, Rwanda on 25-29 April, 2017. The workshop, which was attended by 19 participants, strengthened the capacity of the country to produce administrative and survey-based statistics on telecommunications and ICT that are internationally comparable, timely, and accurate.

- The National Training Workshop on ICT statistics was conducted in Ulaanbaatar, Mongolia from 22 to 24 May 2017. The workshop was attended by more than 120 participants representing the ministry, regulator, NSO as well as operators and service providers. The workshop provided a forum to discuss in detail the list of ICT indicators collected by ITU and other issues related to improving the availability of quality and internationally comparable ICT statistics in the country.

- A capacity building workshop on ICT statistics was held for Mongolia (22 and 23 May 2017), which built capacity of more than 100 participants. Following the workshop, meetings were held with the policy maker (CITA) and main producers of official ICT indicators in Mongolia, namely CRC and the NSO.

- The ITU Asia-Pacific Regional Workshop on ICT Statistics was held from 22 to 25 August 2017 in Xi'an, China, which build capacity of more than 60 participants (representing ministries, regulators and national statistical offices) from 20 countries to collect, produce, analyze, and disseminate quality indicators and statistics on telecommunication/ICT. The workshop was hosted by the Ministry of Industry and Information Technology of China with supports from the Australian Government, China Academy of ICT, Xi'an University of Posts and Telecommunications, and Shannxi Communications Authority.

- The meetings of the ITU Expert Group on Telecommunication /ICT Indicators (EGTI) and Expert Group on ICT Household Indicators (EGH) took place in Geneva, Switzerland, on 12-13 September and 14-15 September respectively. Nearly 100 statistical experts from ICT ministries, national statistical offices telecommunication regulators, and international organizations from 48 countries attended the meetings and discussed how to better track access and use of ICTs by households and individuals, and how data from ICT service providers could be used to inform policy-makers and regulators and help monitor and drive ICT development.

- The 2017 long questionnaire data collection was completed. Around 150 countries submitted their responses to the WTI Long Questionnaire 2017. Around 60 countries responded to the ICT Household Short Questionnaire 2017, and 114 countries responded to the ICT Price Basket Questionnaire 2017.

- The World Telecommunication/ICT Indicators Symposium (WTIS) 2017 was held in Hammamet, Tunisia from 14-16 November 2017 and was attended by around 420 participants from 74 Member States representing public and private organizations including ministries, regulators, national statistical agencies, universities and research institutions, telecommunication operators, ICT firms, and regional and international organizations.

- The Measuring the Information Society Report (MISR) 2017 was launched on 15 November 2017 during WTIS 2017. MISR 2017 includes the results of the ICT Development Index (IDI) 2017 at the global and regional level and highlights countries' improvements since 2016. The report presents a quantitative analysis of the information society and highlight new and emerging trends and measurement issues. It also includes for the first time individual economy profiles providing a snapshot of the latest ICT landscape and efforts made to increase the ICT access, use and proficiency of their citizens. The analytical report is complemented by a series of statistical tables providing country-level data for the indicators included in the IDI. It contributed to the enhanced knowledge of policy makers, investors and business people about current ICT market trends allowing them to take evidence-based decisions; it provides an accurate analysis of telecommunication/ICT development.

- The ITU project on 'Big Data for Measuring the Information Society' was concluded successfully. The project includes pilot studies in six countries (Colombia, Georgia, Kenya, Philippines, Sweden and the United Arab Emirates) that aims to explore how big data from the ICT industry, particularly from telecommunication operators, can produce new or complement existing indicators to measure the information society. The outputs of the project include six country reports and a methodology document describing the big data ICT indicators and methodologies and how the indicators can be produced by operators and service providers, and compiled at the country level. The document was developed and enhanced based on experiences by pilot countries. The use of the methodology document will ensure international comparability of the ICT indicators that are produced from big data sources.
- ITU and the Ministry of Communications and Information Technology of Indonesia organized a mini workshop on ICT indicators and IDI on 12-13 December 2017 in Indonesia.

WTDC	Resolutions 1, 5, 8, 30, 33, 37, 43, 50, 51, 52, 57, 59, 60
PP Resolutions	PP Decisions 5, 13 PP Resolutions 25, 71, 72, 137, 139, 140, 176, 188, 189, 197, 199, 202
WSIS Action Line	Telecommunication/ICT statistics are relevant to the monitoring of the implementation of all WSIS Action Lines 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
Contributing to SDG Targets	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

4.3   Digital inclusion of people with specific needs

- Awareness was raised on the type of ICT accessibility policies that ITU members can adopt and implement to ensure telecommunication/ICT accessibility for persons was disabilities. In addition, the capacity of 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:
  - o Over 1000 ITU Members and stakeholders were made aware or had their capacity built in ICT accessibility policies, strategies, guidelines and good practices. This includes awareness raising during ITU-D Study Group Question 7/1 meetings; on public procurement of accessible ICTs to over 150 participants during the "European Workshop on Accessibility" held on 2-3 February 2017 in Brussels; in Costa Rica on 14 March 2017 to over 100 decision makers who participated in a political buy-in seminar on the topic of ICT Accessibility related to web accessibility (see details related to development of training below); and on 26 May 2017 to over 200 participants on the "Opportunities to promote Accessible ICTs from a global development perspective" in the event "International week – I am accessible" held by the Government of Spain through Ceapat-Imserso"; , 235 participants in "Accessible Americas IV- ICT for ALL" held in Costa Rica from 21 to 23 November as well as to over 75 participants during the Stakeholder Workshop on Web Accessibility organized by European Commission on 29 November in Brussels. ITU activities and key resources on ICTaccessibility were also promoted and shared with the UN diplomatic community during the 4 December celebration of International Day of Persons with Disabilities.
  - o The fourth edition of the Regional Workshop Accessible Americas: ICTs for ALL was carried out in San Jose, Costa Rica, from 21 to 23 November 2017. The event accounted the attendance of 245 participants from 18 countries. The event focused on promoting further the development of accessibility in countries and institutions, through the effort and cooperation of stakeholders and sharing successful outcomes of projects and initiatives already implemented, in order to interchange resources and solutions and make the Americas region a more inclusive society.

o Assistance was provided to Egypt to develop a national ICT accessibility policy. ITU Member State Egypt released its national ICT accessibility policy for persons with disabilities at its annual ICT accessibility conference in April 2017. The policy includes recommendations on additions to Egypt's draft Disability Act as well as its ICT and broadcasting laws and regulations covering web, TV, mobile and public access terminals accessibility along with public procurement of accessible ICTs.

o A national training programme on web accessibility "Internet for @ll" composed by a political buy-in at national level on ICT accessibility and two "face-to-face train-the-trainer" courses on "Accessible web content" and in "Design and development of accessible websites" in line with the WCAG 2.0 web accessibility standards was developed. The pilot of this National training programme was implemented in Costa Rica from 13 to17 March 2017. During the decision maker's buy-in seminar awareness was raised among the Regulator, Superintendencia de Telecomunicaciones (SUTEL), Ministry of Science, Technologies and Telecommunications (MINCIT), the Universidad de Costa Rica and its Consejo Nacional para las Personas con Discapacidad (CONAPDIS). Within the political buy-in, ITU-D also made a presentation of a self-sustainable model that, as a result of a national certification for these two trainings, can generate in-country funds to also build capacity of persons with disabilities in using accessible websites. ITU also delivered the two training courses on web accessibility and as a result ITU-D certified 44 national trainers on "Accessible web content" and 20 national trainers in "Design and development of accessible websites". These courses were delivered at the Universidad de Costa Rica that with the curriculum provided by ITU will take the lead at national level on this topic and will replicate the courses to ensure that Costa Rica governmental websites are made accessible and available for persons with visual disabilities (PwD). The curriculum of this National training programme on web accessibility has already been translated from Spanish into English, French and Arabic and adapted to each region. It will be made available in other ITU official languages in 2018, upon regions' requests.

o Girls in ICT Day events were organized globally on 27 April, including at ITU Headquarters and at all ITU regional offices, raising awareness and contributing to create a global environment that empowers and encourages girls and young women to consider studies and careers in the growing field of ICTs. Up to day, since 2011 when the first International Girls in ICT Day was celebrated, over 9,000 events in 166 countries have taken place, empowering more than 300,000 girls and young women from around the world. In 2017, some 70,000 girls from 134 countries participated in over 2,100 events: this includes events held in 30 countries in the AFR region, 33 in the AMS region, 12 in the ARB States, 20 in the ASP region, 6 in the CIS and 33 in EUR. The ITU Girls in ICT Portal received 1,117,695 page views between January and September 2017. This compares to a total of 383,552 page views in 2016, and 337,936 page views in 2015. The Girls in ICT Portal houses a toolkit and branding materials for organizers to use in their events. It also includes a map of events worldwide, linked to pages where organizers can post pictures, videos and descriptions of the results of their events.

o Awareness about Girls in ICT Day has been raised among tens of millions worldwide and covered by BBC World TV in 2017. #GirlsinICT hashtag reached over 63 million Twitter accounts for 255,057,360 timeline deliveries this year.

o In 2017, the flagship Girls in ICT Day event organized in Geneva was connected with the Girls in ICT Day event organized in Vilnius, Lithuania during RPM-EUR and an event organized by Alfa Telecom in Beirut, Lebanon. These events, and events from around the world, are posted on the Girls in ICT Portal, which also hosts the Girls in ICT Facebook page and #girlsinict Twitter feed. The Portal is available at www.itu.int/girlsinict.

o ITU-D also raised awareness on how ICTs can promote girls' inclusion and access to education (particularly STEM) and employment and contribute to gender equality and women's empowerment with over 40 stakeholders-participants during a WSIS workshop on 15 June 2017, as

well as to over 150 participants during the UNI Global Union - World Executive Board Meeting on "The Future World of Work" held from 9-11 October in Nyon, Switzerland.

- o Internet Access and Training Centre for persons with hearing disabilities was established in Vitebsk, Belarus in March 2017. The Centre provides five working places.

- Girls in ICT Day celebration was encouraged in the Asia-Pacific region in a number of countries. ITU staff at regional office participated at celebrations done by the Asia-Pacific Telecommunity (Fiji), Vanuatu (remotely) and Thailand. A targeted programme for 2017 to train girls in ICT was also launched in Thailand, together with the Ministry of Digital Economy and Society (Thailand) and partners. Following the Girls in ICT Day celebration in Thailand, ITU and Ministry of Digital Economy and Society (Thailand) in partnership with FAO, CCKDM (Thailand) and CISCO have enhanced the awareness and skills of more than 150 female students and 11 women from Thailand through three trainings in using ICTs to improve their careers and work productivity.

- Enhanced regulatory capability for Bangladesh Telecommunication Regulatory Authority to ICT for Bangladesh for empowerment of women using ICT and developed recommendations in December 2017 Dhaka Bangladesh.

- The 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, was improved through:
  - o Raising awareness on the importance of training young people with job-ready digital skills among nearly 200 stakeholders during the June 2017 World Summit for the Information Society (WSIS) Forum "High Level Dialogue on Digital Skills for Decent Jobs for Youth". The session launched the joint ITU-ILO "Digital Skills for Decent Jobs for Youth" campaign to incentivize a range of stakeholders to train 5 million youth worldwide with job-ready digital skills by 2030. The Campaign has been launched under the "Global Initiative on Decent Jobs for Youth", supported by 22 UN agencies. ITU is leading the digital skills thematic area of the Global Initiative on Decent Jobs for Youth which seeks to scale up country action. More information about the campaign is available at www.itu.int/digitalskills.

  - o Raising awareness on digital skills for youth employment, including the joint ITU-ILO "Digital Skills for Decent Jobs for Youth" campaign, among 150 stakeholders attending the World Youth Skills Day event at UN Headquarters in New York on 17 July 2017. Digital skills and the Digital Skills Campaign were promoted at this event by the UN Secretary-General's Envoy on Youth, Ms. Jayathma Wickramanayake and the President of the UN General Assembly, Peter Thomson, including their social media accounts, as well as via #DecentJobsForYouth and #digitalskills. These messages were amplified on International Youth Day, by the ITU Secretary General, the BDT Director and through an ITU Digital Skills Campaign infographic at https://pbs.twimg.com/media/DHA6KseXoAAZWVV.jpg

  - o Creating and making available to all ITU members, young job seekers and entrepreneurs an online database of ICT-enabled resources. This database includes links to training opportunities, crowd funding for start-up capital, mentoring networks and job-matching services to enable members and youth to leverage digital opportunities to enhance their employment and entrepreneurship opportunities. See http://www.itu.int/net4/ITU-D/CDS/sis/Youth/Resources/index.asp.

- 120 digital inclusion programmes and practices were shared on the Digital Inclusion Newslog at http://digitalinclusionnewslog.itu.int/ from January to June 2017, with more than 4,500 views of the newslog posts during this time period.

- Awareness was raised and best practices shared among ITU members through weekly publication of innovative digital inclusion practices and strategies on the ITU-D Digital Inclusion newslog. 181 digital inclusion programmes and practices were shared on the Digital Inclusion Newslog at http://digitalinclusionnewslog.itu.int/ from January to September 2017, with more than 6,757 views of

the newslog posts during this time period. ITU members and related interested stakeholders have access through this newslog to the latest digital inclusion practices and strategies, such as digital literacy, coding training, initiatives to encourage more girls and women to take up ICT studies and careers and ICT accessibility practices for persons with disabilities.

- Support was provided to over 150 indigenous leaders from 16 ITU Member States in Americas Region (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Paraguay, Peru, Uruguay, United States and Venezuela) to develop their capacity in using telecommunications/ICTs for the social and economic development though three (3) on-line courses: on "Access, development and use of web tools and digital content of interest of indigenous communities" (17 April-24 June), on " Training education in entrepreneurship" (3 July-26 August), and on "Development of Indigenous local communication networks (how to develop, manage and operate a network of Indigenous news radio) . (Joint OP action with Americas Region) (11 September-3 November).

- Raised ICT inclusiveness in Belarus by establishing an Internet Access and Training Centre for persons with hearing disabilities in Vitebsk, Belarus, in March 2017. The Centre provides five working places.

- Raised capacity of teachers of 2 Internet Access and Training Centres for persons with hearing disabilities through joint ITU-IIET UNESCO training, which was held in Minsk, Belarus, from 15 to 16 May 2017;

- Discussed results of the Girls in ICT Day initiative in CIS and outlined future directions of its development at ITU Regional Videoconference Seminar, which was held in Moscow, Russia, on 27 April 2017 and which attracted 60 participants from 6 countries.

- Promoting the formulation of ICT Accessibility Policies in the Arab region by assisting Sudan in the regard. Furthermore, assisted the Ministry of Communications and Information Technology of Egypt to formulate the ICT Accessibility Policy for Egypt. The report was launched during the 6th Annual ICT Accessibility Conference that was held in Cairo, Egypt on 8-9 May 2017.

- Promoted ICT Accessibility regionally through the organization of Regional ICT Accessibility Week in collaboration with UNESCO on 24 – 28 September 2017. Activities were organized by 9 partners in 7 countries in the Arab region. On this occasion, ITU and UNESCO organized a High Level Symposium, a training on web accessibility, and a workshop on organizing accessible meetings on 27-28 September 2017 in Cairo, Egypt.

- Completed translation of the ITU curriculum on Web Accessibility into Arabic.

WTDC	Resolutions 1, 5, 9, 11, 15, 20, 21, 22, 23, 30, 32, 55, 58, 68, 76, 77
PP Resolutions	PP Decisions 5, 13 PP Resolutions 25, 30, 32, 33, 34, 36, 37, 64, 70, 71, 131, 139, 140, 175, 184, 198, 202
WTSA	Resolution 55, 69
WSIS Action Line	WSIS Action Lines C2, C4 and C7 and C8 of the Geneva Plan of Action and § 90 of Tunis Agenda for the Information Society
Contributing to SDG Targets	SDGs: 1 (targets 1.2, 1.4, 1.a, 1.b), 4 (targets 4.1, 4.2, 4.3, 4.4, 4.5, 4.a, 4.b), 5 (5.1, 5.5, 5.b, 5.c), 8 (targets 8.2, 8.3, 8.5, 8.6, 8.10, 8.b), 9 (target 9.c), 10 (targets 10.2, 10.3), 11 (targets 11.2, 11.7, 11.c), 16 (target 16.b), 17 (targets 17.6, 17.7, 17.8, 17.17)

4.4 Concentrated assistance to LDCs, SIDS and LLDCs

- A Pre-WTDC-17 Ministerial Roundtable on ICT④SDGs in Least Developed Countries (LDCs), Landlocked Developing Countries (LLDCs), and Small Island Developing States (SIDS) took place on 8 October 2017 and was attended by about 90 participants. The Roundtable highlighted how ICTs are accelerating the attainment of the Sustainable Development Goals (SDGs), and discussed national initiatives on how to address and overcome barriers to ICT affordability, connectivity, access, and use. It identified ICT strategies and policies, innovative technologies, and investment opportunities to drive ICT developments. It also highlighted the role of the private sector.

- To enhance the capacity of LDCs, the report on ICTs, LDCs, and the SDGs is under preparation. The report, which is being produced in cooperation with the UN Office of the High Representative for Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLs), focuses on ICT infrastructure and affordability developments (SDG 9, Target 9c). A draft was presented during the WTDC-17, and the report will be launched in Q1 of 2018.

- Zambia received concentrated assistance in the form of equipment for schools for the blind.

- A presentation to highlight the importance of ICT infrastructure for development in LDCs was made at the Regional Meeting of African LDCs. The meeting was organized from 28 February to 01 March, in Dakar, by the UN Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS).

- ITU made a presentation to highlight the potential of ICTs in the LLDCs as key bedrock of the digital economy at the Expert Group Meeting on Financing Infrastructure Development for enhanced integration of the LLDCs into global trade. The meeting was organized by the UN Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS) and took place on 4 and 5 October 2017 at the United Nations Headquarters, New York.

- A presentation was made to acknowledge ITU's work in the LDCs and the importance of ICTs to fast-forward the implementation of the outcome of the Mid-term Review of the Istanbul Programme of Action (IPoA) and to build synergies and coherence with the 2030 Agenda. The 15th Inter-Agency Consultative Group Meeting of the UN system and international organizations on the implementation of the IPoA for the LDCs for the Decade 2011-2020 was held on 3 October 2017. It was organized by the UN Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS) at the United Nations Headquarters, New York.

- Completed the Strategic Corporate plan for the recently established ICT Commission (ICTC) in Tanzania. The work was started in 2016 with the diagnostic of the situation and the respective validation. In 2017, the draft strategic plan was drafted, and a stakeholders' consultative meeting was held in Dar Es Salaam. After inserting the received inputs, the final document is in the process of being submitted to the ICTC. The Strategic Corporate Plan will help Tanzania to implement a structure ICT development programme.

- Celebrations in Girls in ICT in April. Sponsorship was given to some African countries, and a joint collaboration with UN agencies, such as UN Women, UNDP Regional Office, UNDP Country office and UNECA and the AUC in Addis Ababa, Ethiopia, was held.

- Enhanced skills of 14 participants from Arab LDCs on IPv6 security related security issues at the ITU Arab Regional Training Programme for Arab LDCs on IPv6 (CNE-2), organized in collaboration with NTC-Sudan in April, 2017. 14 trainees from 7 countries were trained.

- Aimed at enhancing the capacity of LLDCs, two reports on "America's landlocked developing countries (LLDCs): Connectivity opportunities and challenges in Bolivia and Paraguay" are currently under preparation.

- BDT contributed a chapter on the Internet Divide, with a focus on infrastructure and connectivity gaps in the LDCs, to the 2017 Aid For Trade at a Glance Report.

- Supported integration of ICT in education in Kyrgyz Republic in April 2017 by supplying remote education facilities as technical assistance to the Institute of Electronics and Telecommunications under Kyrgyz State Technical University named after Iskhak Razzakov.

- The workshop on "Enhancing access to submarine cables for Pacific Islands Countries" (31 July-3 August, 2017 in Fiji) was organized in partnership with Pacific Islands Telecommunications Association (PITA) and with the support of DoCA (Australia) and DoC (Fiji). The workshop built capacity and skills of around 90 participants from government, regulators, industry, and academia in the area of submarine cable access, pricing and costing.

- During 2017, a total of 624 fellowships were provided to participants from LDCs to participate in ITU meetings. Every LDC received at least one fellowship.

- The ITU Asia-Pacific CoE workshop on "Implementing E-application strategies for telecom sector growth in the Pacific" organized in partnership with PITA, DoC (FIJI), DoCA (Australia) and MDES (Thailand) built capacity of 65 participants from 13 countries in the area of telecom strategy, e-applications and platform development with specific reference to the Pacific.

WTDC	Resolutions 16, 17, 18, 21, 25, 26, 30, 33, 36, 37, 50, 51, 52, 53, 57, 60
PP Resolutions	PP Decisions 5, 13 PP Resolutions 25, 30, 32, 33, 34, 36, 70, 71, 123, 124, 125, 126, 127, 135, 159, 160, 161, 193, 202
WRC	Resolution 12
WCIT	Resolution 1
WSIS Action Line	WSIS action lines 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
Contributing to SDG Targets	SDGs: 1 (target 1.4), 3, 4 (targets 4.3, 4.5, 4.6, 4.a, 4.b), 5 (target 5.b), 6, 8 (target 8.5), 9 (targets 9.1, 9.2, 9.5, 9.a, 9.c), 10 (targets 10.2, 10.b), 11 (targets 11.1, 11.2, 11.7), 12 (target 12.b), 13 (target 13.b), 14, 15, 16, 17 (targets 17.7, 17.8, 17.9, 17.18)

5 **Objective 5:** *"Enhance environmental protection, climate change adaptation and mitigation and disaster management efforts through telecommunication/ICTs"*

5.1 ICTs and climate-change adaptation and mitigation

- The e-waste management policy and regulatory framework for Saint Lucia were finalized.

- The first phase (Phase 1) of a study for developing an E- Waste Management Policy and Regulatory Framework for Jamaica has been completed. The final phase (Phase 2) is 90% completed.

- ITU, together with the United Nations University (UNU), and the International Solid Waste Association (ISWA) is finalizing the Global E-waste Monitor 2017, which was launched on December 15th. This report presents 2016 global and regional figures on the amount of e-waste produced, and features a number of other figures, such as global and regional recycling rates, and the number of countries with e-waste legislation. This report is one of the key outcomes of the Global E-waste Statistics Partnership. The main objective of this Partnership is to build capacity to help countries produce reliable and comparable e-waste statistics, to collect data from countries and build a global e-waste database to track developments over time and by this informing policy makers and industry. ITU and its partners have secured funding to continue his work in 2018.

- BDT is finalizing the 'Handbook for the development of a policy framework on electrical and electronic waste from Information and Communication Technologies'.

- The final reports of the ITU-D Study Group Period 2014-2017 Questions 6/2 on ICTs and Climate Change and Question 8/2 on Strategies and Policies for the proper disposal or reuse of telecommunication/ICT waste material were published.

- BDT is finalizing a joint project with Universidad de La Plata, Argentina. The aim of this project is to establish an e-waste recycling pilot plant that will provide concrete responses the e-waste problems in cities in line with Sustainable Development Goals.

- BDT if finalizing a publication on Successful Electronic Waste Management Initiatives which will provide an overview of some examples and experiences in the African, Asian, European and Latin American regions on existing effective WEEE management initiatives that could serve as a basis to develop a best practice on the sound management of e-waste that could be replicated in other parts of the world.

- BDT is working on the development of training materials on ICTs and Climate Change, which is being done in four stages; stage 1 – scoping of the programme; stage 2-development of content; stage 3 – peer review and stage 4 –editing of the material. We have completed stage 1 and stage 2: all materials for the 21 modules have been developed and peer reviewed. We are now in stage 4 of editing of the materials

- A study has been commissioned to determine the capacity building needs of African countries in terms of developing guidelines on the development of legislative frameworks. This study would recommend a capacity building plan for having e-waste legislative framework in place.

- BDT is working on the development of a report to design an e-waste policy and regulatory framework for Malawi, including an assessment of current e-waste treatment and a forecast of e-waste volumes and values. Specifically, the policy framework will set out mechanisms to control the import, reuse and or production of ICT devices, the identification of activities and responsibilities of each of the stakeholders, both private and public, involved in the sound management of e-waste and a financing model for the e-waste management system.

- Regional Training Workshop on ICT for Climate Change Mitigation and Adaptation in Arab Region was organized in collaboration with the Tunis-International Center for Environmental Technologies (CITET). The workshop was held in Tunis, Tunisia, 12-13 July 2017. The workshop aimed at building skills on the required actions for Climate Change mitigation and adaptation and the role that ICT plays in tackling it. The workshop was attended by more than 60 participants, representing 7 member states and 3 UN agencies and 1 academia member.

- Regional workshop on Prospects of Smart Water Management (SWM) in Arab Region were held in Khartoum, Sudan on 12 December, 2017. The workshop aims to discuss the increasing role of ICT technologies to manage water resources, particularly for agricultural and urban uses in a smart city. Moreover, the workshop will shed light on the opportunities and challenges for expanding smart water management in the Arab region.

- Regional Forum on Internet of Things (IoT) for development of Smart Sustainable Cities (SSC) for Arab Region was held in Khartoum-Sudan, 13-14 December 2017. The forum will shed light on the increasing role of the Internet of Things (IoT) impacting various areas of development, ultimately contributing to building smart sustainable cities with integrated ecosystems.

- Showcasing utilization of ICTs to manage groundwater resources in a project on Smart Groundwater Management in collaboration with the Ministry of Communications and Information Technology of Egypt.

WTDC	Resolutions 17, 21, 30, 32, 37, 50, 52, 53, 66
PP Resolutions	PP Decisions: 5, 13, PP Resolutions: 25, 71, 182
WTSA	Resolution 73
WSIS Action Line	Action Line C7 (e-environment) of the Geneva Action Plan is closely linked to Output D.5.1.
Contributing to SDG Targets	SDGs: 3 (target 3.9), 5 (target 5b), 9, 11 (targets 11b), 13 (targets 13.1, 13.2 and 13.3), 14, 15

5.2   Emergency Telecommunications

- The II Workshop on Technologies for mitigating the effects of earthquakes and tsunamis was organized in Pisco, Peru on 21 and 22 June 2017.

- Pacific Training on VSAT Fundamentals and Installation took place in Vanuatu on 15-18 May 2017. It is part of the ITU project on the development of satellite communications capacity and emergency communications solutions for Small Islands Developing States of the Pacific.

- ITU supported the Government of Zimbabwe in addressing the challenges following the devastation caused by severe floods through the deployment of emergency telecommunication equipment. The equipment was used to coordinate recovery and rehabilitation activities, including providing communication to the most affected communities in the country.

- BDT finalized the implementation of two Early Warning Systems in Mbeta Island and Kasaya Village in Zambia. The systems will be used to provide early warnings to population on flooding and mudslides.

- ITU build capacity in Members States through the Second Multi-stakeholder Forum on the Role of Telecommunications/ICT in Disaster Management, which took place from 29 to 31 August 2017, in Bogotá, Colombia. The Forum, which was attended by about 400 participants, was organized by the ITU Telecommunication Development Bureau (BDT) and the Ministry of Information Technologies and Communications (MINTIC) of Colombia. The 2017 Forum served as a platform to exchange new experiences and best practices in the use of modern technologies for monitoring and for the establishment of multi-hazard early warning systems.

- A Letter of Intent to Establish an Agreement on "The use of ICTs for emergency and disaster situations in the Americas region" was signed by CITEL, COMTELCA, CTU, and ITU.

- An audit of the Caribbean Regional and Sub Regional Emergency Telecommunication Systems is being carried out in collaboration with CDEMA to specifically assess the regional and sub regional emergency telecommunication systems (for at least 10 of the 18 participating states) to identify current weaknesses and strengths and make recommendations for improvement, including to develop emergency telecommunication plans and systems.

- The ITU Regional Training Workshop on ICTs for Disasters Management for the Arab Region was organized in Khartoum, Sudan 28-29 August, 2017, and hosted by the National Telecommunications Corporation (NTC) in Khartoum, in collaboration with GSMA. The overall objective of training workshop was to raise awareness on the importance of the ICT role in disaster management and broaden knowledge on the humanitarian context of emergency response and the inter-agency response mechanisms. The training workshop was attended by more than 80 participants representing 10 Member States from the region, 2 from Africa including Palestine (based on resolution 99) and 5 private sector entities and other national organizations, 5 UN Specialized Agency, 1 other entities dealing with telecommunications, and 3 member Academia.

- As an implementation part of the BDT project "Development of ICT Applications against Ebola Disease" (Project No. 7RAF15087), BDT organized a Training Workshop on Server Configuration and Data Collection for Big Data Project (CDR Secure Storage and Analysis) as well as Use of ICT applications for humanitarian coordination, such as Tele-Health. The training took place from 16 to 20 October 2017, in Freetown, Sierra Leone. The training workshop was attended by 18 participants representing three (3) project beneficiary Member States – Sierra Leone, Liberia and Guinea. Project implementation was completed by 15 December 2017.

- Following the end of the ITU-D Study Group Period 2014-2017 (in April 2017), the final report of Study Group Questions 5/2 on Utilization of telecommunications/ICTs for disaster preparedness, mitigation and response was launched at WTDC-2017.

- ITU and the Australian Government (i.e. Department of Communications and the Arts) entered into a cooperation agreement to implement a project on emergency telecommunications in Asia and the Pacific, which will be carried out in 2018.

- BDT raised awareness on the importance of the ICT role in disaster management and broaden knowledge on the humanitarian context of emergency response and the inter-agency response mechanisms through a Regional Training Workshop on ICTs for Disasters Management for Arab Region organized in Khartoum, Sudan on 28-29 August, 2017 in collaboration with GSMA and hosted by NTC-Sudan. The training workshop was attended by more than 80 participants, representing 10 Member States from the region, 2 from Africa including Palestine (based on resolution 99) and 5 private sector entities and other national organizations, 5 UN Specialized Agency, 1 other entities dealing with telecommunications, and 3 members from Academia.

- A training workshop and focus group on Pacific Satellite Connectivity project were held in Bangkok, Thailand on 29 August 2017 and followed by the ITU International Satellite Symposium 2017. The workshop and focus group meeting were attended by focal points of the Pacific Islands Countries and industry partners of the ITU project.

- In September 2017, ITU deployed emergency telecommunication equipment to the Caribbean Islands as a response effort after the massive devastation caused by Category 5 Hurricanes Irma and Maria. Many Caribbean countries suffered extensive damages from some of the strongest storms to hit the region. Several Member States, including Haiti, Dominica and Antigua and Barbuda, received emergency telecommunications equipment, including 8 satellite phones and 3 BGANs that were deployed by ITU specifically for the purpose of giving information on the aerial shots allowed for photographic and audio feedback to news agencies, as well as to assist in the coordination among CDEMA and other responding units, for a combined total deployment in the Caribbean Region of 70 satellite phones, peripherals & accessories; 13 BGANs, peripherals & accessories; 33 Solar Chargers & accessories and two (2) VSAT, peripherals & accessories to support humanitarian relief and initial recovery efforts and for further coordination for recovery and reconstruction activities. The systems were installed in East-South East and South East communities of La Plaine and Delices of Dominica with 6 months of free connectivity. The two (2) VSATs will remain in Dominica as part of their infrastructure with connectivity cost undertaken by the country.

- ITU, CITEL, COMTELCA and CTU signed a letter of intention during WTDC-2017 in Argentina, committing to develop a cooperation mechanism for the implementation of projects on the use of ICT for emergency and disaster situations in the Americas region.

- As a result of that signed letter of intention with CITEL, COMTELCA and CTU, A Pilot project on establishment of an Alternate Regional Emergency Telecommunications Network in the Americas Region was prepared to assist the beneficiary countries in enhancing their emergency telecommunications capabilities and to improve emergency and disaster response. The beneficiary countries are Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and Panama, and all of them have signed the Project document and are ready to comply with their commitments in the project. The solution consists of implementing the Alternate Regional Emergency Telecommunications Network in beneficiary countries, providing the Emergency Operations Centers (EOC) of ITU Member States with the necessary equipment (RMS server and client function) to connect to the network Winlink 2000, under the characteristics of redundancy and autonomy. The Project will be finished by June 2018, before the start of the hurricane season. The main objective of the project will be the strengthening of the cooperation among Telecommunication and Disaster Response authorities, and radio amateur associations. ITU has already started promoting the adoption of this solution all over the Americas region.

WTDC	Resolutions 1, 5, 17, 21, 30, 32, 34, 37, 50, 52, 53, 69
PP Resolutions	PP Decisions: 5, 13, PP Resolutions: 25, 37, 71, 98, 136, 140, 182, 202
WRC	Resolution 646, 647
WCIT	Resolution 2
WSIS Action Line	Action Line C7
Contributing to SDG Targets	SDGs: 3 (target 3.9), 5 (target 5b), 9, 11 (targets 11b), 13 (targets 13.1, 13.2 and 13.3), 14, 15

ITU-D Result-Based structure

Objectives

Objectives 1: Foster international cooperation on telecommunication/ICT development issues

Objective 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

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

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

Objective 5: Enhance environmental protection, climate change mitigation and adaptation, and disaster management efforts through telecommunication/ICTs

Outputs

1.1 WTDC
1.2 Regional Preparatory Meetings (RPMs)
1.3 Telecommunication Development Advisory Group (TDAG)
1.4 Study Groups

2.1 Policy and regulatory frameworks
2.2 Telecommunications/ICT networks, including conformance and interoperability and BSG
2.3 Innovation and Partnership

3.1 Building confidence and security in the use of ICTs
3.2 ICT applications and services

4.1 Capacity building
4.2 Telecommunication/ICT statistics
4.3 Digital inclusion of people with specific needs
4.4 Concentrated assistance to LDCs, SIDOs and LLDCs, including countries in special need

5.1 ICTs and Climate change adaptation and Mitigation
5.2 Emergency telecommunications

Activities

Creation of tools and guidelines
Handling of special needs

Project management and coordination
Financial, operational and strategic planning, control and reporting

Database and web site management
Documentation (preparation, writing and editing)

Assisting members and related tasks
Research and analysis

Sharing information and related tasks
Preparation and delivery of training

Overview of objectives and outputs

Chart 1 presents the breakdown of actual human resources among the five ITU-D objectives for 2017.

Chart 2 presents the breakdown of actual human resources by outputs of the Telecommunication Development Sector for 2017.
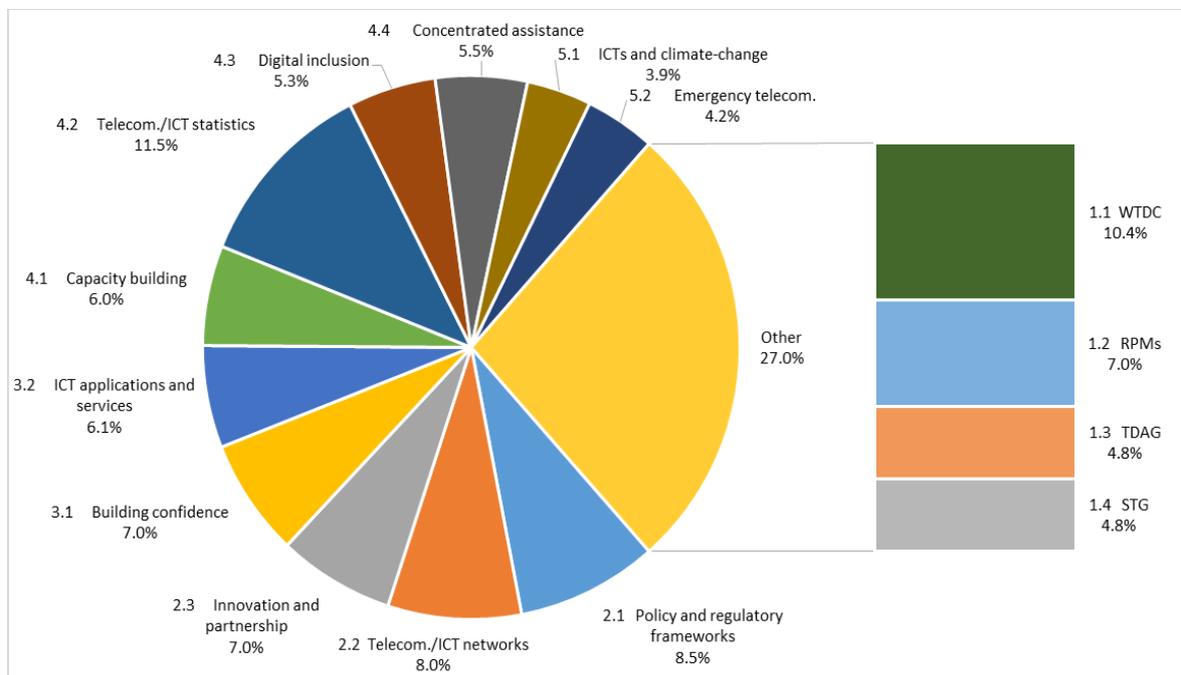
Structure of the Performance Report

The 2017 Performance Report follows the Operational Plan's result-based structure and sets forth details for the major objectives, their respective outcomes, achievements, outcome indicators; the outputs as well as the expected and achieved results, and performance indicators.

The structure of the Performance Report is as follows:

This **Part 1** contains the executive summary of the report.

Part 2 sets forth details on the five major objectives and their related outcomes and outputs.

Part 3 provides detailed information concerning the Bureau activities/actions.

Part 4 presents a set of tables and charts that provide all relevant details on the planned/actual resource allocations for 2017.

For each output, the following information is provided:

• Description of the output and major trends/policy issues relating to the output.

• Detailed statement of expected and achieved results and PIs for 2017 as well as measurement of the results.

• Threat and risk assessment of the output.

For each outcome, the following information is provided:

• Detailed statement of the 2017 achievement and the 2017 measurement of the outcome indicators.

PART 2 – The five objectives of the Telecommunication Development Sector

This section presents the five objectives of the Telecommunication Development Sector, their respective outputs, as well as the expected and achieved results and description and measurement of the performance indicators for 2017; the outcomes related to the outputs as well as the outcome indicators and achievement, and description and measurement of the performance indicators for 2017.

Objective 1

Foster international cooperation on telecommunication/ICT development issues

Objective 1 includes the following outputs:

– World Telecommunication Development Conference (WTDC)

– Regional Preparatory Meetings (RPMs)

– Telecommunications Development Advisory Group (TDAG)

– Telecommunications Development Study Groups

For 2017, the actual human resources allocated to objective 1 represent **27.0 per cent** of the total human resources of the Telecommunication Development Bureau.

Chart 3 illustrates the breakdown of the actual allocation of human resources among the four outputs of objective 1.
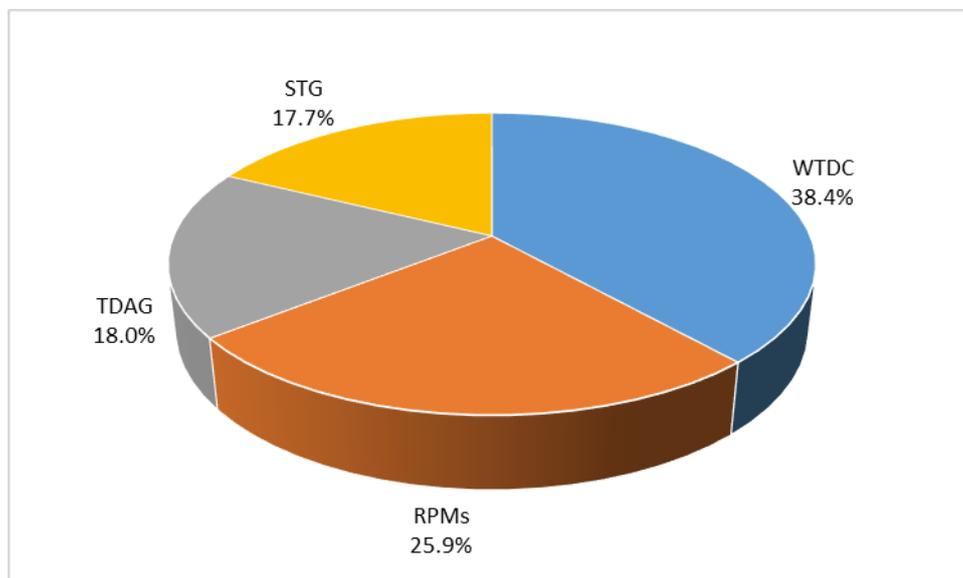
Output 1.1

World Telecommunication Development Conference (WTDC)

The International Telecommunication Union, through the Telecommunication Development Bureau (BDT), organizes a World Telecommunication Development Conference (WTDC) every four years.

The World Telecommunication Development Conferences serves as a forum for free discussion by all concerned with the ITU Telecommunication Development Sector.

In addition, they review the numerous programmes and projects of the Sector and BDT.

Results are reported and new projects are launched. The WTDC sets the work program and priorities for the following four-year cycle.

2017 Implementation

Outcomes	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
D1-1 Draft strategic plan for ITU-D.	• ITU-D contribution to the strategic plan of ITU for 2020-2023, to be considered at the next plenipotentiary conference.	• 2020-2023 input to the draft strategic plan to be approved at the plenipotentiary conference.	• ITU-D input to the ITU strategic plan agreed on by WTDC.	• Done.
D.1-2: WTDC Declaration.	• WTDC declaration approved by WTDC-17.	• WTDC declaration approved by WTDC-17.	• WTDC Declaration, highlighting the main conclusions and priorities established by the Conference, and reinforcing the political support towards ITU's development mission and strategic objectives, adopted by WTDC.	• Done.
D.1-3: WTDC Action Plan.	• WTDC-17 action plan Approved.		• Action Plan, aligning the work of ITU-D with the strategic objectives of ITU, prepared and adopted by WTDC.	• Done.
D.1-4: Resolutions and recommendations.	• New and revised Resolutions and Recommendations adopted by WTDC-17.		• New and revised Resolutions and Recommendations adopted by WTDC and in between Conferences, as appropriate.	• Done.
D.1-5: New and revised Questions for study groups.	• New and revised Questions, reflecting the needs of the membership adopted by WTDC-17.		• New and revised Questions, reflecting the needs of the membership adopted by WTDC, and in between Conferences, as appropriate.	• Done.

RESULTS ASSESSMENT

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
• 90% action plan implementation rate • Timely preparation before for WTDC-17 (logistics, documentation, delegate facilities, etc.)	• 90% action plan implementation rate.	• Action plan implementation rate. • Members' level of satisfaction with the preparations. • Percentage of documents prepared within regulatory deadlines.	• 90% action plan implementation rate.

Threat and risk assessment

Perspective	Risk reported	Impact reported	Mitigation measures implemented
1. Finance	Insufficient financial resources	High	• Appropriate budget forecast prepared • Mobilize additional resources, if necessary • Appropriate host country agreement negotiated
2. Organizational matters	Inaccurate forecasts	High	• Appropriate forecasts prepared based on coordination and communication with the members • Lessons taken from historical data and experiences gained during similar events in the past
3. Organizational matters	Failure to secure host country	High	• Member States more engaged • Member States were encouraged to announce the host for the WTDC at the previous WTDC
4. Stakeholders/ Partners	Delays in determining and agreeing on the dates and the venue, and the specification of requirements and/or programs	Medium	• Cooperation with regional telecommunication organizations ensured and improved, and members determined dates and venue well in advance of WTDC
5. Stakeholders/ Partners	Low participation and contributions by countries in preparatory activities organized by ITU for the WTDC	Medium	• Communication with regional telecommunication organizations improved and members ensured their participation in the preparatory activities for WTDC

Output 1.2

Regional preparatory meetings (RPMs)

Resolution 31 (rev Dubai, 2010) calls for the organization of one development conference or regional preparatory meeting per region to coordinate, at the regional level, the preparation for the World Telecommunication Development Conference (WTDC).

The main purpose of the Regional Preparatory Meeting (RPM) is to engage the ITU members in the WTDC process early on and to consider, at the regional level, appropriate ICT development strategies. To this end, they seek to identify priority areas and related initiatives, projects, Study Group Questions that need to be addressed to foster the development of telecommunications and of information technologies.

Participants are expected to review reports on the implementation of the Dubai Action Plan adopted by the 2014 World Telecommunication Development Conference (WTDC-14), along with contributions from the Member States and Sector Members in a bid to draw up recommendations on priority areas to be considered by WTDC in 2017.

Each Regional Preparatory Meeting brings together the countries in its region to explore and discuss their needs and the present and future projects of the Sector.

In line with WTDC Resolution 31, the Telecommunication Development Bureau (BDT) is organizing one regional preparatory meeting per region for WTDC-17. RPMs were held as follows:

-        9-11 November 2016 in the Kyrgyz Republic, for the Commonwealth of Independent States (CIS);
-        6-8 December 2016 in Rwanda, for Africa;
-        30 January-1 February 2017 in Sudan, for the Arab States;
-        1-3 March 2017 in Paraguay, for the Americas;
-        21-23 March 2017 in Indonesia, for Asia and the Pacific;
-        27-28 April 2017 in Lithuania, for Europe.

Each RPM will be preceded by a one-day Regional Development Forum.

2017 Implementation

Outcomes	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
D.1-6: Increased level of agreement on priority areas.	• RPMs AMS, ARB and ASP showed high level of consensus concerning all issues addressed during the meetings.	• N/A (RPMs are only dedicated to the preparation of WTDCs).	• Level of agreement and consensus achieved on priority areas at the RPMs in preparation for WTDC.	• No disagreements during the discussions on main subjects.
D.1-7: Assessment of the implementation of the Action Plan and of the WSIS Plan of Action.	• The Report on the implementation of the Dubai Action Plan (WTDC 14), and contribution to the implementation of the WSIS Plan of Action and the Sustainable Development Goals (SDGs) (RPMs document 2 & 3) provides all pertinent information regarding the assessment of the implementation of the AP and WSIS AP.	• N/A (RPMs are only dedicated to the preparation of WTDCs).	• Level of implementation for items in the Action Plan and the WSIS Plan of Action Level assessed (percentage) and reported on to the membership at the RPMs in preparation for WTDC.	• See RPMs documents 2 & 3.
D.1-8: Identification of regional initiatives.	• The 4 RPMs held in 2017 have identified respective regional initiatives.	• N/A (RPMs are only dedicated to the preparation of WTDCs).	• Number of regional initiatives, identified during RPMs for submission to WTDC.	• Five (5) regional initiatives identified by each RPMs. • The five (5) proposed regional initiatives are almost the same as the previous proposals from WTDC-14 but with broader scope and a fine-tuning of the objectives and expected results.
D.1-9: Increased number of contributions and proposals for the Action Plan.			• Number of contributions and proposals for the Action Plan received by the RPMs and WTDC, and percentage of countries in the region involved in the preparatory process.	• RPM-AMS received 39 Contributions. • RPM-ARB received 44 Contributions. • RPM-ASP received 34 Contributions. • RPM-EUR received 36 Contributions.

RESULTS ASSESSMENT

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
• Preparation of the reports on the outcomes of the 2016/2017 RPMs to WTDC-17.	• Document 2 (RPMs) sets forth details on the results achieved in the implementation of RPMs outcomes. • The 6 RPMs identified five (5) regional initiatives each and set priorities for the forthcoming concerned timeframe. All details may be found in RPMs Chairman's reports.	• Timely preparation of the reports (percentage of reports prepared and made available on time).	

Threat and risk assessment

Perspective	Risk reported	Impact reported	Mitigation measures implemented
1. Finance	Insufficient financial resources	High	• Appropriate budget forecast prepared • Mobilize additional resources, if necessary • Appropriate host country agreement negotiated
2. Organizational matters	Inaccurate forecasts	High	• Appropriate forecasts prepared based on coordination and communication with the members • Lessons taken from historical data and experiences gained during similar events in the past
3. Organizational matters	Failure to secure host country	High	• Member States more engaged • Member States were encouraged to announce the host for the WTDC at the previous WTDC
4. Stakeholders/ Partners	Delays in determining and agreeing on the dates and the venue, and the specification of requirements and/or programs	Medium	• Cooperation with regional telecommunication organizations ensured and improved, and members determined dates and venue well in advance of WTDC

Output 1.3

Telecommunications Development Advisory Group (TDAG)

The role of the TDAG is to advise the Director of the Telecommunication Development Bureau (BDT) on the implementation of the WTDC Action Plan, including issues relating to the budget and the operational plan of the Telecommunication Development Bureau.

One TDAG meeting is held annually to maintain and strengthen cooperation among all Member States and Telecommunication Development Sector Members.

2017 Implementation

Outcomes	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
D.1-10: Enhanced review of priorities, programmes, operations, financial matters and strategies.	• TDAG, at its 22nd meeting, reviewed priorities, programmes, operations and other related questions.	• As for 2018.	• Review of ITU-D priorities, programmes, operations, financial matters and strategies by TDAG implemented.	• Not applicable.
D.1-11: Work programme.	• See above.		• Regular review by TDAG of progress in the implementation of the established work programme/plan adopted by WTDC conducted.	• Not applicable.
D.1-12: Comprehensive preparation of progress report to the Director of BDT on the implementation of the work programme.	• Report was prepared.	• Report is prepared after each TDAG meeting.	• Progress reports to the BDT Director with advice on corrective action to be taken by BDT delivered.	• Not applicable.

RESULTS ASSESSMENT

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
• Preparation and organization of the 22nd meeting of TDAG and implementation of the recommendations and advice. • Efficient support to the TDAG activities, including the TDAG meeting. • Regional support to the TDAG activities, mainly the TDAG meetings.	• Document TDAG17-22/73-E.	• Number of BDT submissions timely prepared and distributed. • Number of contributions from members, including their posting on the web timely processed. • Dissemination of the final summary of the TDAG meeting within 30 days following completion of the meeting. • Relevance of the contributions Received. • Number of participants.	• Document TDAG17-22/73-E.

Threat and risk assessment

Perspective	Risk reported	Impact reported	Mitigation measures implemented
1.Organizational matters	Inaccurate forecasts	High	• Appropriate budget forecast prepared • Mobilize additional resources, if necessary • Appropriate host country agreement negotiated
2. Stakeholders/ Partners	Delayed contributions and inputs to the TDAG meetings	High	• Information shared on the upcoming meetings and deadlines (as per Resolution 1 (Rev. Dubai, 2014) in a timely manner • Support provided to the members in order for them to prepare for the meetings and submit their contributions on time
3. Stakeholders/ Partners	Low participation by members	High	• Communication improved with regional telecommunication organizations and members to ensure their participation

Output 1.4
Telecommunication Development Study Group Meetings

ITU-D study groups provide an opportunity for all Member States and Sector Members, Associates and Academia, to share experiences, present ideas, exchange views and achieve consensus on appropriate strategies to address ICT priorities. ITU-D study groups are responsible for developing reports, guidelines and Recommendations based on input received from the membership. Information is gathered through surveys, contributions and case studies, and is made available for easy access by the membership using content-management and web-publication tools.

Pursuant to WTDC Resolution 2 (Rev. Dubai, 2014), the scope of work for Study Group 1 is to study "Enabling environment for the development of telecommunications/ICTs", and of Study Group 2 to study "ICT applications, cybersecurity, emergency telecommunications and climate-change adaptation". The working procedures to be followed by the ITU-D study groups are set out in WTDC Resolution 1 (Rev. Dubai, 2014). Continuous efforts are made to mainstream gender equality and accessibility into the ITU-D study groups.

2017 Implementation

Outcomes	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
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.	• ITU-D study groups' work programmes executed in accordance with schedules, and information dissemination accomplished in a timely manner. • The final Study Group 1 and 2 meetings agreed to 18 final reports containing the deliverables (reports, best practices and guidelines) called for by WTDC-14 achieving the expected results for the 2014-2017 study period. The deliverables were made available in various accessible formats in the six languages for WTDC-17.	• Extensive knowledge-sharing and dialogue among Member States and Sector Members, Associates and Academia on emerging telecommunication/ICT issues for sustainable growth.	• Number of participants in ITU-D Study Group meetings and related activities. • Number of contributions to ITU-D Study Groups received.	• In 2017, the annual ITU-D SG1 and ITU-D SG2 meetings both welcomed more than 155 participants each. In addition, each of the Rapporteur Group meetings attracted between 30 and 50 participants, including remote participants, to their meetings. • 297 distinct contributions out of a total of 468 processed documents, including several iterations of the final reports were handled by ITU-D study groups in 2017.
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.	• In addition to the customary Study Group and Rapporteur Group meetings in Geneva, expert meetings and workshops related to the Questions under study have been held. Existing tools have been improved and new ways of working introduced to facilitate the work of the membership.	• Provision of useful and value added services to the membership and strengthened capacity of members to develop and implement ICT strategies and policies.	• Membership with strengthened capacity to develop and implement ICT strategies and policies and deploy infrastructure and applications.	• Expert meetings and workshops have been held to gather case studies and raise awareness on selected topics under study. Sponsorship opportunities and other activities linked to the SG1 and SG2 work programmes have been organized to meet the diverse needs expressed by the members.

RESULTS ASSESSMENT

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
• Expertise shared at Study Group meetings and Rapporteur Group meetings. • Every region represented by at least 10 members (including remote participation). • Work programmes prepared in response to Resolution 2 reviewed. • Increased use of electronic tools to progress the work • Reports, guidelines, Recommendations agreed on.	• 42 distinct meetings organized in Geneva and in the regions (Benin). The two ITU-D Study Groups successfully held their fourth and final meetings for the 2014-17 study period in March and April 2017 to finalize the work items agreed by WTDC-14. Rapporteur Group meetings were held in January 2017 together with a workshop on cybersecurity and risk assessments. An expert meeting on consumer information, protection and rights was held in Benin in March 2017. • Members' face-to-face and remote participation in meetings and their contributions to the activities have been adequate to advance the 17 study Questions, and the joint ITU-D/ITU-R work on WTDC Resolution 9. • Existing electronic tools, like CRM, remote participation platform, events desktop and mobile apps have been enhanced which have increased active collaboration during and between meetings to progress the work.	• Number of relevant contributions submitted to Study Group meetings and Rapporteur Group meetings. • Level of participation of members (all regions represented) • Relevant and timely review of work programmes undertaken in response to Resolution 2. • Number of downloads/remote participants/use of online discussion fora compared to previous period. • Timely and efficient production of deliverables with appropriate quality. • Timely and efficient preparation of proposals to the new study period.	• As inputs to the elaboration of the final deliverables for the fourth and final meetings in the study cycle, SG1 considered 67 contributions and SG2 58 contributions. In addition, the January 2017 SG1 and SG2 Rapporteur Group meetings received 51 and 58 contributions respectively with focus on input for the final reports. • For their meetings in March and April 2017, ITU-D SG1 welcomed 155 participants, including remote participants, from 47 Member States and ITU-D SG2 received 155 participants from 50 Member States. In January 2017 the 18 SG1 and SG2 Rapporteur Group meetings (including the Joint Group on Resolution 9) each welcomed between 30 and 50 participants. • In 2017, the final Study Group 1 and 2 meetings agreed to 18 final reports containing the deliverables (reports, best practices and guidelines) called for by WTDC-14. In addition, ITU-R Study Group 1 reviewed the report of the joint ITU-D/ITU-R group on WTDC Resolution 9 on "Evolving spectrum

Expected results (Ctn'd)	2017 achieved results	Performance Indicators	2017 Performance data
	• Associated events, workshop exhibition, sponsorship opportunities, and other activities linked to the SG1 and SG2 work programmes have been held to meet members' needs.		management tools to support development needs" during its June 2017 meeting. • During the Study Group and Rapporteur Group meetings in 2017, the groups discussed the future of the existing study Questions and potential new topics, which in turn served to inform Member States as they prepared for WTDC-17. Input from the two surveys that the study groups sent out during the last year of the study cycle were useful input to these discussions.
• 100% – Draft deliverables Available. • Interim deliverables published (based on work plans). • Reports, guidelines, Recommendations published.	• The final Study Group 1 and 2 meetings agreed to 18 final reports containing the deliverables (reports, best practices and guidelines) called for by WTDC-14 which were made available in various accessible formats in the six languages for WTDC-17.	• Timely preparation of the draft Deliverables. • Timely distribution of interim deliverables (based on work plans). • Timely and efficient production of the final deliverables with an appropriate level of quality.	• In 2017, the final Study Group 1 and 2 meetings agreed to 18 final reports containing the deliverables (reports, best practices and guidelines) called for by WTDC-14. • The reports were presented by the SG1 and SG2 Chairmen to the membership at WTDC-17.

Threat and risk assessment

Perspective	Risk reported	Impact reported	Mitigation measures implemented
1. Finance	Insufficient financial resources	High	• As the necessary financial resources were made available, the activities could be undertaken effectively • Due to high demand, efficient allocation of limited resources for fellowships could enable further participation by LDCs and LICs
2. Organizational matters	Inadequate level of support for processing documents, facilitating the Study Group process and the running of meetings	High	• As the necessary level of resources/support was made available for the meetings, the processing of documents and the finalization of the final deliverables, and the smooth running of the meetings could be ensured
3. Stakeholders/ Partners	Limited number of contributions from the members to progress the work of the related Study Group Questions	High	• 2017 saw an adequate level of contributions from the membership to finalize the work of the related Study Group Questions and topics under study
4. Stakeholders/ Partners	Low or limited participation by the membership in the work of the related Study Group Questions	High	• Adequate participation in the meetings, including by remote participants and using online tools in between meetings allowed the groups to finalize their work for the study cycle

Objective 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

Summary

Objective 2 includes the following outputs:

– Policy and regulatory frameworks

– Telecommunication/ICT networks, including conformance and interoperability and bridging the standardization gap

– Innovation and partnership

For 2017, the actual human resources allocated to objective 2 represent **23.5 per cent** of the total human resources of the Telecommunication Development Bureau

Chart 4 illustrates the breakdown of the actual allocation of human resources among the three outputs of objective 2.
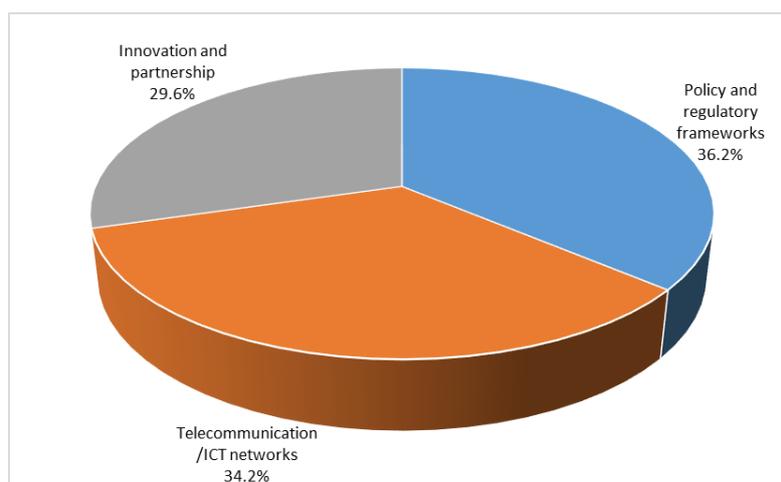
Output 2.1

Policy and regulatory frameworks

The ICT sector is experiencing tremendous change. With the ever-escalating global demand for ubiquitous, always-on, rapid and easy access to data and applications, led by the deployment of broadband networks that facilitate convergence of information, communications and broadcasting, the way in which services are delivered to and accessed by consumers has radically changed. Communications no longer just connect people: the Internet of things (IoT) is fast becoming a reality.

In evolving towards a digital economy, ICTs, and in particular broadband, are increasingly recognized as critical to social and economic growth and competitiveness of countries. Therefore, a sound and clear policy and regulatory environment is needed to ensure that all can benefit from ICT services.

An enabling environment must take into consideration all areas that have an impact on the spread and uptake of ICTs, including the elaboration, implementation and review of national ICT policies, plans and guidelines. Regulators need to continue to be kept informed of current costing issues, as well as financial mechanisms and economic modelling, in order to be able to measure the impact and implications for a national competitive environment. In the midst of the profusion of services and platforms, regulators and policy-makers need to continue to pay attention to fostering infrastructure development, investment in high-speed networks, innovation and efficient use of scarce resources, while at the same time focusing increasingly on consumer protection (privacy, data protection, etc.) and ensuring affordable access for all to ICTs and the digital economy.

2017 Implementation

Outcomes	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
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.	• Successful 17th edition of the Global Symposium for Regulators (GSR) and its pre-events (the Global Dialogue on Digital Financial Inclusion and the Regulatory Associations meeting and Private sector Chief Regulatory Officers meeting). • A strategic dialogue on International Mobile Roaming was organized, bringing together regional regulatory associations and other relevant organizations. • A facilitation meeting on the Regulatory Wheel of Fire: Collaborative Regulation to Leverage ICTs for SDGs was held during the WSIS Forum 2017. • BDT Forum on Economics and Finance in ICTs/ Telecommunication for Africa and the TSB-SG3 Regional meeting for Africa were held back-to-back from 30 January to 2 February 2017 in Zimbabwe, and for the Arab States, was held in Nouakchott, Mauritania on 17-18 May 2017.	• Successful GSR to enhance regulatory collaboration across the sectors and provide membership with the platform to discuss upcoming regulatory and policy issues – target- 600 participants. • Enhanced Regional Economic Dialogues to enhance strategic dialogue on economic and financial issues across the sectors.	• Number of participants in face-to-face events on economic, policy, legal and regulatory issues, including the Global Symposium for Regulators (GSR).	• GSR 17 attracted more that 400 participants from 60 countries. • IMR Strategic Dialogue resulted in Strategic Guidelines drafted with input from regulatory and other regional and international associations. • BDT Forum on Economics and Finance in ICTs/ Telecommunication for Africa was attended by 91 participants from 25 countries and 5 institutions, and for the Arab States, was attended by 85 participants from 6 countries. • ITU Regional Forum on Consumer Information, Protection, and Rights for Africa 2017 was attended by 131 participants from 21 countries. • Expert Group Meeting on Smart Grids, gathered more than 30 telecom and energy stakeholders. • ITU – TRAI Asia-Pacific Regulators' Roundtable and ITU-TRAI International

Outcomes	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
D.2-2: Improved decision-making on policy and regulatory issues and conducive policy, legal and regulatory environment for the ICT sector	• ITU Regional Forum on Consumer Information, Protection, and Rights for Africa 2017 was held in Cotonou, Benin on 14-16 March 2017. • Expert Group Meeting on Smart Grids, held on 28 February 2017 within the framework of the ITU Regional Initiative for Europe on Broadband, provided foundations for a study on smart grids to be released in Q2/2017. • ITU – TRAI Asia-Pacific Regulators' Roundtable and ITU-TRAI International Training Program were held on 21-25 August 2017 in New Delhi, India, resulting in improved policy and regulatory capacity and skills of participants. • Helped CIS Member-States to understand and discuss best practices of policy making and regulation to enable digital economy at an ITU Regional Workshop, which was held in Moscow, Russia and attracted 49 participants from 12 countries.			Training Program were attended by 50 participants from 24 countries for the Regulators Roundtable, and 94 participants from 20 countries for the International Training Program. • ITU Regional Workshop, held in Moscow, Russia attracted 49 participants from 12 countries.

Outcomes	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
	● ITU-D continues to share data, research, and analysis and publications on cutting-edge policy, regulatory, and economic issues, including the 2017 Global Regulatory Outlook Report, a new report on Maximizing availability of international connectivity in developing countries, a discussion paper on the social and economic impact of digital transformation on the economy, Reports and White Papers analyzing new business models in a digital economy, reports on collaborative regulation for digital financial inclusion in Mongolia and Sudan, an ITU Manual for QoS Regulation was prepared with input from ITU-T, and Strategic Guidelines on International Mobile Roaming. ● Enhanced Knowledge-exchange tools and platforms to facilitate access to data (ICTEye, ICT Regulation Toolkit, the ICT regulatory knowledge centre).	● Improved collaboration and tools for evidence-based decision-making made available to Membership by sharing data, research, and analysis and publications on cutting-edge policy, regulatory, and economic issues. ● Enhanced Knowledge-exchange tools and platforms to facilitate access to data. ● Gathering and Publishing key regulatory and tariff data to facilitate evidence-based decision making.	● Number of countries with improved capacity to take policy and regulatory decisions to create an enabling environment for ICT development. ● Number of active users benefitting from online platforms for knowledge and information exchange on policy, legal and regulatory issues.	● Website views and downloads of regulatory and financial data from January 2017 to December 2017 culminated in the following outreach with the membership and public: – *online knowledge centre: 506'279 page views;* – *annual GSR websites: 217'846 page views;* – *Telecommunication Regulation Handbook 33'427 online downloads (only from the ITU website);* – *ITU regulatory and market environment thematic reports: 74'734 downloads;* – *ICT-Eye: 613'362 page views.*

Outcomes	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
	• Gathering and publishing key regulatory and tariff data to facilitate evidence-based decision making: the ICT Regulatory Tracker covers over 186 countries for a period of nine years, showcasing national, regional, and global regulatory progress. The 2017 edition of the annual ITU-D questionnaire on regulatory and policy issues was sent out to Membership to help track the evolution of ICT policies and regulation.			

RESULTS ASSESSMENT

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
• At least 20 % additional Member States to have institutional, policy, legal and regulatory framework in place for the ICT sector so as to foster affordable access, inclusion, and trust in a smart connected society. • At least 20% of Member States have guidelines in place to build the foundation for collaborative regulation at national, regional and global level. • Situation analysis conducted, awareness increased, dialogue fostered, and guidelines prepared on specific topics to foster affordable access and digital empowerment of institutions, business and consumers in a smart connected society. • Countries, Members and Regional Associations, supported on specific topics.	• GSR Best Practice guidelines Adopted. • Access to the ICT Regulatory Tracker has been facilitated through its release on a new online micro-site. • Regional regulatory association meeting held in July 2017 and attracted more than 60 participants from 12 Associations from around the world. • Annual questionnaires released and processed for 2017 Regulatory Tracker. • Strategic dialogues and GSR held, with positive results, including GSR 17 that attracted more than 400 participants from 60 countries. • IMR Strategic Dialogue resulting in Strategic Guidelines. • BDT Forum on Economics and Finance in ICTs/Telecommunication for Africa attended by 91 participants from 25 countries and 5 institutions, and for the Arab States, attended by 85 participants from 6 countries. • ITU Regional Forum on Consumer Information, Protection, and Rights for Africa 2017 attended by 131 participants from 21 countries. Expert Group Meeting on Smart Grids, that gathered more than 30 telecom and energy stakeholders.	• Percentage of Member States supported over the 3 years period. • Response rate to the annual questionnaires to members. • Publications, reports, studies prepared, guidelines adopted, and events organized on specific topics.	• Close to 100% of Member States supported through ICT regulatory and tariff data, as well as global and regional events and strategic dialogues. • Guidelines adopted at GSR and in the framework of IMR Initiative. • Reports published, including The 2017 Global Regulatory Outlook, a new report on Maximizing availability of international connectivity in developing countries: Strategies to ensure global digital inclusion as well as a discussion paper on the social and economic impact of digital transformation on the economy. • Reports and White Papers analyzing new business models in a digital economy. • Reports on collaborative regulation for digital financial inclusion in Mongolia and Sudan. • ITU Manual for QoS Regulation. • Strategic Guidelines on International Mobile Roaming. • Study and report of the Broadband strategy for Burundi.

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
	• ITU - TRAI Asia-Pacific Regulators' Roundtable and ITU-TRAI International Training Program attended by 50 participants from 24 countries for the Regulators Roundtable, and 94 participants from 20 countries for the International Training Program. • ITU Regional Workshop, held in Moscow, Russia that attracted 49 participants from 12 countries.		• Broadband Universal Access Study and Household Survey for the Kingdom of Lesotho. • Inputs to study group questions, in particular relating to ITU-D Study Group 1/1, 3/1, 4/1 and 6/1.

Threat and risk assessment

Perspective	Risk reported	Impact reported	Mitigation measures implemented
1. Finance	Lack of resources to provide the appropriate support level in case of high demand from countries	Medium	• Prepared an appropriate budget forecast and sought additional resources
2. Competency / Knowledge	Lack of qualified experts in the domains concerned	Medium	• Anticipated the resources requirements and initiated recruitment procedures as soon as possible • Kept up-to-date and expanded the roster of experts
3. Stakeholders / Partners	Insufficient commitment of countries and/or at local level	Medium	• Ensured and constantly improved cooperation with countries so as to guarantee appropriate level of involvement by countries and/or at the local level

Output 2.2
Telecommunication/ICT networks, including conformance and interoperability and bridging the standardization gap

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

The ICT sector is characterized by rapid technological change, and by convergence of technological platforms for telecommunications, information delivery, broadcasting and computing. The deployment of common broadband technology and network infrastructures for multiple telecommunication services and applications and the evolution to all IP-based wireless and wired next-generation networks (NGNs) and their evolutions open up opportunities but also imply significant challenges for developing countries.

The rapid deployment of wireless and mobile technologies indicates the growing importance of radio spectrum management and the role it plays in the socio-economic development of countries.

Also notable is the worldwide transition from analogue to digital broadcasting, enabling more efficient use of spectrum and higher quality audio and video delivery.

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. Availability of high-performing and interoperable products accelerates widespread deployment of infrastructure, technologies and associated services, granting people access to the information society regardless of location or choice of device. Increasing the knowledge and capacity of developing countries for the effective application/implementation of standards (Recommendations) developed in ITU T and ITU R is fundamental for bridging the standardization gap.

2017 Implementation

Outcomes	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
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.	• 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 has been concluded. Addition of mobile coverage layer (2G, 3G, 4G) is ongoing. Procurement process for developing a new Map interface and promotional material has been concluded. • Two draft reports produced: - business plan for placing Telecommunication/ICT Infrastructure - Infrastructure Mapping for achieving the SDGs.	• Providing and maintaining ITU interactive Terrestrial Transmission Maps through the ITU web. • Support provided to developing countries to plan, deploy, operate and maintain sustainable, accessible and resilient ICT networks and services , including broadband wireless and wire-line infrastructure, especially to Rural and Remote areas.	• Number of countries with improved capability of planning and operating ICT networks and services. • Number of countries with Broadband Master Plan developed.	• The Map presents information from 406 operator networks, 28,456 transmission links, and 19,170 nodes worldwide. • The research on the transmission links has reached 13,010,406 km of routes, of which 3,101,414 km have been imported to the Map. • A new IXP location layer has been added; Submarine Cable and Satellite Earth Station layers updated with end of 2017 data. • Broadband connectivity in Burundi: 437 institutions in the country are connected to Broadband Wireless Networks. • 25% of the connected institutions are schools and hospitals; 24 % are pharmacies, cooperatives and associations in rural areas; 8% are from the public sector and the remaining 13 % are from private users and SME (Small and Medium Enterprises).

Outcomes (Ctn'd)	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
	• Infrastructure and their technologies as well as economic and policy aspects supporting effective adoption of NGNs. The report makes reference to more than 200 ITU publications (e.g. ITU-D Study Group Reports, ITU Guidelines, and ITU Recommendations from all Sectors). • "The Essentials of Future Internet Exchanges and Services" guidelines and report was developed in order to assist ITU members to more effectively plan and implement future Internet Exchanges for the Internet of Things and OTT services.			• Assisted countries in implementing the SMART Africa Manifesto and facilitated Smart Africa • Steering Committee and Board meetings in the governance of the Initiative. • The Smart Africa Alliance currently consists of 38 countries, 9 International Organizations and 6 Private Sector Members. • Development of Broadband Wireless Networks in Burundi, Burkina Faso, Djibouti and Rwanda, providing Broadband Connectivity to schools and hospitals. • New Broadband Wireless Connectivity Model in Swaziland taking into consideration the Migration strategy to NGN in Swaziland (4G LTE in collaboration with Huawei). • Assistance to Member States on the Development of Broadband Access is ongoing for CIS countries: Web-based software for selecting the most feasible solution for broadband deployment in CIS and Georgia based on information about specific location in CIS and Georgia (city, settlement, etc.). • Development of Broadband Wireless Master Plans for Congo Brazzaville and Malawi laid the foundation for

Outcomes (Ctn'd)	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
				broadband adoption and usage in these countries. • Broadband connectivity in Djibouti: 19 cities and sites are connected to Broadband Wireless Networks across the country. Two sites are located in Djibouti City, the nation's capital, (Balbala and Boulaos) and other sites. • Pre-feasibility study to enhance ICT infrastructure for East African Community (EAC) to support the EAC-ITU-China Project completed for the 3 components: Enhanced Broadband and connectivity infrastructure in East African Community.
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	• Guidelines on Establishing Conformity and Interoperability. • Regimes countries revised challenges faced by developing countries as they plan and review their national or regional C&I regimes, including conformity assessment procedures, legislation to promote an orderly equipment marketplace,			• C&I assessment studies and validation workshops resulted in the establishment of C&I expert groups in 5 regions; 39 concerned countries : UMA (5 countries), the Caribbean (17 countries), Central (7 countries) and South America (10 countries). • MRAs are being drafted and will facilitate establishment and sharing of C&I labs by these

Outcomes (Ctn'd)	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
basis of ITU Recommendations, at national, regional and subregional levels by promoting the establishment of mutual recognition agreement (MRA) regimes and/or building testing labs, as appropriate.	surveillance, coordination across regulatory agencies and adoption of relevant international standards. • Other related reports cover the creation of local or regional testing laboratories and the establishment of MRAs for promoting efficient mechanisms. • C&I programmes for telecommunication/ICT equipment.			Regional Economic Communities. • The ITU Asia-Pacific Centre of Excellence with focus on C&I has conducted two trainings. • The capacity building events were offered to 69 participants from more than 30 countries in real testing facilities through the collaboration of laboratory partners in the C&I Programme; i.e. China Academy of Telecommunication Research of MIIT (CAICT), Centre d'Etudes et de Recherches des
	• Regional integration increased along with ICT infrastructure development through assessment studies in the regions, including for Arab Maghreb Union (UMA), East African Community (EAC), Comisión Tecnica Regional de Telecomunicaciones (COMTELCA), and the Caribbean Telecommunication Union (CTU), to encourage the establishment of harmonized C&I			Télécommunications (CERT), and Centro de Pesquisa e Desenvolvimento em Telecomunicações (CPqD) All training materials and case studies reported by participants on the current national C&I status available on the C&I portal.

Outcomes (Ctn'd)	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
	programmes, notably through the development of Mutual Recognition Arrangements/Agreements (MRAs) between countries and/or building 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)	• Spectrum Management Master Plans (SM MP) were prepared within the framework of an ITU-Ministry of Science, ICT & Future Planning (MSIP) (Republic of Korea) project. • Spectrum Management System for Developing Countries (SMS4DC) is now in use in over 45 countries, • Version 5.1 of the software was released at the 3rd Quarter of 2017. • 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	• Most of the Member States have NTFA, have spectrum management strategy or masterplan or using SMS4DC and 70 % of the ITU Member States have regional cross-border frequency coordination agreement. • Awareness increased and guidelines prepared on broadcasting and spectrum. • Countries supported on spectrum management and broadcasting topics.	• Number of countries with increased capacity in the area of frequency planning and spectrum management and measurement and regulation related to human exposure to (EMF). • Number of countries with Spectrum management Master Plans finalized.	• SM MP has been prepared for 4 countries. • Basic Spectrum Management System Project: assistance for 2 countries started. • Training on SMS4DC provided to more than 45 participants. • Version 5.1 released and further developments are ongoing. • Direct assistance was provided to more than 30 countries in all regions regarding frequency planning; spectrum management master plans; the transition from analogue to digital terrestrial television broadcasting; and other technical issues 2017 measurement of the outcome indicators. • Workshops were delivered in ARB, ASP, AMS, AFR, EUR, CIS regions to more than 300

Outcomes (Ctn'd)	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
	electromagnetic fields (EMF) through forums, workshops, seminars and trainings.			specialists from more than 60 countries in the field of Terrestrial and Space Radiocommunication services. • Expert workshops in Rome and Warsaw on EMF issues of 5G implementation in Europe for around 90 participants from 25 countries.
				• Spectrum management assistance on spectrum assignment processes in Colombia. • Assistance in 5 ASP countries on spectrum monitoring and NTFA development. • Contribution to accreditation of the SMTP and in the update of the training program.
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.	• Reports have been prepared which summarized the results of assistance provided to ASP and AMS countries on the digital broadcasting transition. • Several Forums, Seminars, Workshops and trainings have been	• Most of the ITU Member States have switched off analogue terrestrial television broadcasting and 5% of the countries started the implementation of digital radio. • Countries supported on spectrum management and broadcasting topics.	• Number of countries that implemented projects on the transition from analogue to digital broadcasting.	• 2 African countries implementing their roadmaps for Digital Terrestrial TV Broadcasting in 2017. • 10 countries in AMS region are working on the implementation of the digital broadcasting. • Summary report on the

Outcomes (Ctn'd)	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
	implemented in 2017 in the area of digital broadcasting and partnerships have been strengthened with regional organisations such as ABU and AIBD while organizing these seminar and forums. • Specialized country expertise support has been provided to Thailand (NBTC) on digital radio and FM replanning and community TV. Colombia is assisted in replanning their radio broadcasting network.			experiences of the AMS and the ASP digital broadcasting. • 2 countries (Thailand, Colombia) was assisted in digital radio implementation • ITU Digital Switchover Overview Database was updated by 15 countries.

RESULTS ASSESSMENT

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
• Assessment study on C&I conducted at regional/subregional level. • Providing and maintaining ITU Interactive Terrestrial Transmission Maps through the ITU web. • Improvement of the capacity of developing countries to put in place a sustainable and appropriate Conformance and Interoperability Regime at national, Regional and Sub-regional levels, through implementation of training activities in the premises of Testing Labs, direct assistance promoting the establishment of MRAs regimes and/or building Testing labs as appropriate, Regional Forums and Seminars, implementation of projects and development of guideline and tools. • Providing and maintaining ITU Interactive Terrestrial Transmission Maps through the ITU web. • Support provided to developing countries to plan, deploy, operate and maintain sustainable, accessible and resilient ICT networks and services, including broadband wireless and wire-line infra-structure, especially to Rural and Remote areas.	• Based on the Guidelines on Establishing Conformity and Interoperability Regimes countries could revise challenges faced by developing countries as they plan and review their own C&I regimes, including conformity assessment procedures, legislation to promote an orderly equipment marketplace, surveillance, coordination across regulatory agencies and relevant international standards. • Regional integration is increasing along with ICT infrastructure development through assessment studies in the regions, including for Arab Maghreb Union (UMA), East African Community (EAC), Comisión Tecnica Regional de Telecomunicaciones (COMTELCA), and the Caribbean Telecommunication Union (CTU), to encourage the establishment of harmonized C&I programmes, notably through the development of Mutual Recognition. • Arrangements/Agreements (MRAs) between countries and/or building labs, as appropriate. As a follow-up to the studies, UMA, EAC and COMTELCA Secretariats are conducting Experts/Ministerial	• Number of studies conducted for assessing the status of implementation of the C&I programmes and testing laboratories in place in the Regions. • Number of Countries participating in the Regional Training Activities on C&I. • Number of countries supported for implementing C&I programmes. • Number of publications, reports, studies prepared on specific topics. • Number of countries for which the ITU Interactive Transmission (Optical Fibers, Microwaves, Satellite) Maps are made available through the ITU web. • Number of communities, and disadvantaged groups, in developing countries connected to broadband. • Percentage of the Member States over the three years period	• One (1) assessment studies, 13 new case studies. • One hundred and thirty (130) participants/ sixty (60) countries participated in Regional Training Activities. • Six (7) countries supported for C&I. • Two studies prepared on C&I; One study prepared on Mapping ICT infrastructure; One study prepared on business plan for broadband infrastructure placement. • The Map presents information from 406 operator networks, 28.456 transmission links, and 19.170 nodes located in 167 countries. The research on the transmission links has reached 13.010.406 km of routes, of which 3.101.414 km have been imported to the Map. • Six (6) in 2017. • DSO database: 15 countries Updated.

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
• Enhancement of knowledge and effective application of ITU Recommendations in developing countries, including conformance and interoperability (C&I) testing of systems manufactured on the basis of ITU Recommendations. • At least 80 % of Member States started projects for implementation of digital terrestrial television broadcasting. • At least 70% of the Member States developed National Table of Frequency Allocation (NTFA), have spectrum management strategy or masterplan or using SMS4DC. • Awareness increased and guidelines prepared on broadcasting and spectrum management topics. • Countries supported on spectrum management and broadcasting topics.	meetings in 2017 to finalize their respective MRAs. • 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. • 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. • The report introduces essential telecommunication/ICT infrastructure and their technologies as well as economic	running project on the implementation of digital terrestrial television broadcasting. • Roadmaps, case studies, guidelines and reports prepared for digital broadcasting implementation and spectrum management related topics. • Percentage of Member States Supported. • Percentage of Member states using SMS4DC.	• Ten (10) cases studies, reports and Guidelines, twenty five (25) roadmaps, SM MP and NTFA. • More than fifty (50) countries. • More than 45 countries are Subscribers.

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
	and policy aspects supporting effective adoption of NGNs. • The report makes reference to more than 200 ITU publications (e.g. ITU-D Study Group Reports, ITU Guidelines, and ITU Recommendations from all Sectors). • 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. • Reports have been prepared which summarized the results of assistance provided to ASP and AMS countries on the digital broadcasting transition. • Support to countries on the transition to digital broadcasting as a result of applying ITU guidelines, the promotion of capacity building activities related to spectrum management and digital broadcasting. • Spectrum Management Master Plans (SM MP) were prepared within the framework of an ITU- Ministry of Science, ICT & Future		• Provision of assistance for the development of guidelines for sustainable broadband infrastructure in rural areas. • Delivery of studies on broadband.

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
	Planning (MSIP) (Republic of Korea) project. • The Spectrum Management System for Developing Countries(SMS4DC) is now in use in over 45 countries. • Version 5.1 of the software was released at the third quarter of 2017 which contains modules for additional propagation models and import data from external sources in the system. The software is also available in Spanish. • 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) through forums, workshops, seminars and trainings.		
	• Several Forums, Seminars, workshops and trainings have been implemented in 2017 in the area of digital broadcasting and spectrum management and partnerships have been strengthened with regional organisations such as ABU and AIBD		

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
	while organizing these seminar and forums. • AMS RI 3 on "Development of broadband access and adoption of broadband".		• Capacity building activities support for the establishment of Community ICT Centers. • Support to South American countries in terrestrial optical cable systems. • National broadband policies developed to implement a broadband technology framework.
	• Enhanced the skills of 26 participants from the Americas Region on telecommunications networks, 4G, Advanced IMT, mobile communications, broadcasting, IP, NGN.		• 26 participants trained on Broadband Networks.

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
	• Improved regional collaboration on technical aspects of post-NGN, 4G and 5G (ITU Regional Conference) held in Kiev, Ukraine, on 7-9 June 2017 and was attended by 125 participants from 7 countries.		• 125 participants from 7 countries in CIS.
	• Experience exchanged and capacity building on broadband technologies at an ITU Regional Workshop, held in Odessa, Ukraine, on 27-29 September 2017 and gathered 51 participants from 10 countries.		• 51 participants from 10 countries.
	• IPv6 Knowledge increased for 292 participants from diverse backgrounds, including Administrations, Regulators, Operators and academia (excluding presenters), registered (217 participated) for the course held on 13–26 May 2017 (Thailand).		• 292 participants from Asia trained on IPv6.
	• IPv6 Knowledge increased for 35 participants from across the Asia-Pacific on Internet and IPv6 Infrastructure Security Program" (8-12 May 2017 at TOT Academy, Nonthaburi, Thailand, ITU Asia Pacific Centre of Excellence Training).		• 35 participants from across the Asia-Pacific trained on Internet and IPv6 Infrastructure security.
	• IPv6 Skills improved for 50		• 50 participants from

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
	participants from government, regulators, industry and academia on IPv6 Deployment and IPv6 Security (19-21 June at Thimphu, Bhutan). • Assisted Djibouti in the feasibility study for the establishment of a Regional Internet Exchange Point (IXP). • Guatemala assisted in the establishment of the interim executive committee and definition of the model of the national IXP.		government, regulators, industry and academia have been trained on IPv6 Deployment and IPv6 Security. • Assistance provided to Djibouti Regional Internet Exchange Point (IXP). • IXP Assistance provided to Guatemala.

Threat and risk assessment

Perspective	Risk reported	Impact reported	Mitigation measures implemented
1. Assistance to members	Lack of funding to assist members	Medium	• Discussions with members, administrations for resources mobilization
2. Finance	Lack of resources to provide the appropriate support level in case of high demand from countries	Medium	• Appropriate budget forecast to be prepared • Mobilization of additional/ extra-budgetary resources when required
3. Competency/ Knowledge	Lack of qualified experts in the field of activity	High	• Anticipate the resources requirements and initiate recruitment procedures as soon as possible • Create and keep up-to-date a roster for experts
4. Stakeholders/ Partners	Insufficient commitment by countries	High	• Ensure and improve cooperation with countries so as to guarantee appropriate level of involvement by countries

Output 2.3
Innovation and partnership

The national ability of rapid innovation is seen as the key factor for facilitating the overall competitiveness of countries in a globally interconnected world of ICT-based services especially through strategic partnerships including public-private partnership (PPP) particularly with engagement of ITU-D membership in order to mobilize resources and roll out capital-intensive telecommunication/ICT environment from policy-regulatory frameworks, infrastructure, to various innovative applications.

Thus, there are strong needs to support both the Objectives with Outputs of ITU-D Sector adopted at the WTDC-14 as well as the ITU-D membership through innovation and partnerships in, *inter alia*, a) developing policy-coherent approaches and guidelines to ICT innovation, based on best practices, to be integrated into national development agendas; b) developing internationally comparable measurement of ICT innovation capabilities at national levels; c) fostering ICT innovation in the public sector at all levels of government to enhance the delivery of public services, improve efficiency, coverage and equity, and create positive externalities in the rest of the economy; d) undertaking initiatives that support entrepreneurship and the start-up and expansion of new ICT firms; and e) developing cooperation and partnerships among developed and developing countries and other organizations, to encourage and support innovation and creativity methodologies, mobilize resources, and adopt cost-effective ICT solutions.

2017 Implementation

Outcomes	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
D.2-7 Strengthened capacity of members to integrate telecommunication/ICT innovation in national development agendas.	• Developed 1 toolkit that provide a frameworks to map key barriers in the ecosystem and assist stakeholders through their innovation journey. • Conducted 3 regional or global workshops covering 20 countries. Over 40 people were trained and 30 people were certified as innovation experts. • Conducted 4 national workshops in 4 countries with participation from over 200 participants combined. • Conducted 3 knowledge sharing initiatives at the regional innovation forum, the WSIS global innovation track, and a side event at WTDC-17 on digital transformations.		• Number of countries with strengthened capacity on telecommunication/ICT innovation. • Number of initiatives and projects fostering innovation signed and implemented.	• Number of countries with expert trained. • Number of certified experts on innovation. • Number of toolkit. • Number of knowledge sharing initiative for membership.

Outcomes (Ctn'd)	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
D.2-8 Enhanced public-private partnership to foster the development of telecommunications /ICTs.	• Partnership to foster the development of telecommunications/ICTs enhanced. • 58 new partnership agreements signed with various stakeholders from the ICT ecosystem. • Sponsorship opportunities opened for side and social activities around several meetings (GSR-17, ITU-D Study Group meetings, WTDC-17 as well as ITU-D 25th Anniversary).	• New partnerships agreements signed with various stakeholders for the ICT ecosystem to foster telecommunications/ICTs development.	• Number of strategic partnerships including PPP signed and implemented to foster the development of telecommunication/ICT networks as well as relevant applications and services. • Number of projects to foster the development of telecommunications/ICT signed and implemented.	58 new partnership agreements were signed with various stakeholders: multi-thematic (20), on ICT Applications (12), on human capacity building (6), on infrastructure (5), on emergency telecommunication (4), on digital inclusion (3), on cybersecurity (3), on e-waste (2), on regulatory and market environment (2), and on innovation (1). The beneficiary regions of these newly-signed agreements were: Global (33), the Americas (7), Asia-Pacific (8), Africa (4), Arab States (3), Europe (2), and CIS (1).

RESULTS ASSESSMENT

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
• At least 30 % of ITU-D members to have guidelines on ICT innovation. • At least 30% of ITU-D members to have access to an innovation platform for fostering their local ICT ecosystem. • Enhanced tools for partnerships, resource mobilization and membership (e.g. partnership and sponsorship opportunities' websites, membership portal, etc.). • New partners in various ITU-D Activities. • At least 30 new partnerships signed to implement initiatives and/projects. • Enhanced and diversified ITU-D membership base and new platforms for partnership.	• Through the launch of the toolkit, the workshops provided at global, regional, and national, and the knowledge sharing sessions at various events, at least 30% of membership have access to an innovation platform. • Similarly, through guidelines provided for the countries studies available publicly, at least 30% of membership has some access to the information. • Partnership and resource mobilizations tools enhanced: e.g. partnership agreements database, sponsorship website. • New sponsorship opportunities opened for side and social events around various meetings. • 58 new partnership agreements signed with various existing and new partners from the ICT ecosystem. • Membership portal, communication outreach materials enhanced and new pilot publication for academia engagement.	• Percentage of ITU members which have the guidelines on ICT innovation. • Percentage of ITU members which have access to an innovation platform of product/services for fostering local ICT ecosystem (SME, incubators model, etc.). • Number of website views/downloads. • ITU-D Members' feedback concerning their level of satisfaction with services provided. • Number of new partners in various ITU-D activities. • Number of new partnership signed and/or implemented. • Number of new ITU-D sector members, associates and academia.	• 58 new partnership agreements signed with various existing and new partners from the ICT ecosystem. • 31 new members institutions affiliated to ITU-D.

THREAT AND RISK ASSESSMENT

Perspective	Risk reported	Impact reported	Mitigation measures implemented
1. Stakeholders/ Partners	Lack of confidence of potential new members in the benefits gained from ITU	Lack of interest of new members in ITU's membership	• Brainstorm and propose new services to members; periodically visit members
2. Stakeholders/ Partners	Difficult to identify interested beneficiaries for development project	Lack of interest	• Agreements or project documents signed with Administrations
3. Resources mobilization	Lack of funding due to the global financial crisis	Restriction in action plan implementation	• Brainstorming on resources mobilization to implement action plans
4. Finance	Difficult to identify sponsors	Lack of interest	• Partners/Sponsors identified, including through the Administrations

2017 On-going projects by region

The table below provides the list of the current on-going projects for **Objective 2** by region

| Project No	Title	Region
2BDI15002	Strengthening institutional, regulatory and technical capabilities of Burundi for sustainable broadband development	Africa
7MAG17004	Réseau hertzien large bande de Madagascar	Africa
7RAF08073-01	Broadband Wireless Network in Africa	Africa
7RAF08073-04	Broadband Wireless Network - Mali	Africa
7RAF08073-05	Broadband Wireless Network - Burkina Faso	Africa
7RAF08073-06	Broadband Wireless Network - Rwanda	Africa
7RAF08073-07	Broadband Wireless Network in the Kingdom of Lesotho	Africa
7RAF08073-08	Broadband Wireless Network - Swaziland	Africa
9BRA98006	Support the Implementation of National Telecommunications Agency (ANATEL, Brazil)	America
9COS17018	Desarrollo del conocimiento en tecnologías, para especialistas del ICE	America
9DOM17002	Reforma a la Ley General de Telecommunicaciones de la Republica Domincana (INDOTEL)	America
9RLA15014	Support for Harmonization of ICT Policies in the Caribbean	America
9THA16032	Study on Convergence Licensing Trends	America
9COL16036	Policy Development on Broadcasting	America
9COL17037	Diagnóstico y Auditoría al Proceso de Selección Objetiva para la Asignación del Espectro del MINTIC	America
9COL17038	Diseño de estrategia para la implementación de mejores prácticas internacionales en la asignación de espectro atribuido al servicio móvil IMT en Colombia	America
2RLA17015	Support to the Caribbean Countries through a contribution to upgrading Caribbean Telecommunications Unionś (CTU) ICT Network Infrastructure	America
9PAR17002	Apoyo Institucional a la Comisión Nacional de Telecomunicaciones (CONATEL) para el desarrollo de modelos de costos Bottom Up, basados en un Operador Eficiente para el mercado de telecomunicaciones de Paraguay	America
9SAU17007	Advisory Services to Saudi Arabia's Communication and Information Technology Commission (CITC)	Arab States
2PLS13003	Connect a School, Connect a Community in the State of Palestine	Arab States
7PLS14004	Connect a School, Connect a Community Initiative in the State of Palestine Project II	Arab States
7RAF08073-03	Broadband Wireless Network - Djibouti	Arab States
9RAS16055	Master Plans for Spectrum Management and Country Assistance in Spectrum Management	Asia & Pacific
9THA16034	Development of a Detailed Frequency Plan for FM Radio Services in Thailand	Asia & Pacific
9RER17024	European mHealth Knowledge and Innovation Hub	Europe
9GLO17087	Mainstreaming ICT Applications for SDG	World or Multi-Regional
9GLO17089	Hack for Food security and ending hunger	World or Multi-Regional
9GLO18091	Development of a toolkit for ICT innovation policy/governance and ICT innovation ecosystem	World or Multi-Regional
9GLO17084	Development of a toolkit for ICT innovation policy/governance and ICT innovation ecosystem-II	World or Multi-Regional
9GLO17085	Basic National Spectrum Management System	World or Multi-Regional
9GLO17086	Further developments to Spectrum Management System for Developing Countries (SMS4DC) software	World or Multi-Regional
9GLO18090	National Spectrum Management Assistance Workshop	World or Multi-Regional
2GLO18092	Development of collaboration platform to foster affordable access to international optical fiber infrastructure	World or Multi-Regional
9GLO15078	Delivery of the Spectrum Management Training Program (SMTP)	World or Multi-Regional
9GLO16080	Delivery of the Spectrum Management Training Program (SMTP)	World or Multi-Regional

Objective 3

Enhance confidence and security in the use of telecommunications/ICTs, and roll-out of relevant applications and services

Objective 3 includes the following output:

- Building confidence and security in the use of ICTs
- ICT applications and services

For 2017, the actual human resources allocated to objective 3 represent **13.1 per cent** of the total human resources of the Telecommunication Development Bureau.

Chart 5 illustrates the breakdown of the actual allocation of human resources among the two outputs of objective 3.
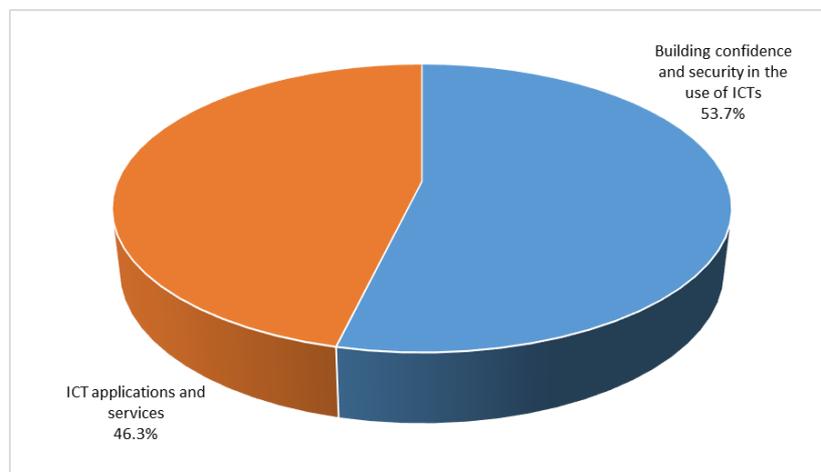
Output 3.1

Building confidence and security in the use of ICTs

ICTs are integral to the economic and social development of all nations as well as to the development of the information society. Security is an essential element of the operation and use of ICTs, and requires that all persons involved be aware of security and take action appropriate to their role.

As the use of ICT continues to grow, cybersecurity and combating the transmission of e mail spam continues to be a priority among members. During the last four years, ITU D continued to work in this area.

BDT undertook many activities that offer development assistance to members and encourage cooperation among members, while under Question 22/1 products and materials were elaborated to support countries in developing national cybersecurity capabilities, to convene experts and to contribute to ongoing information-sharing on best practices. The Question also identified key areas of common concern, as well as gaps, based on contributions to a compendium and a survey, respectively.

2017 Implementation

Outcomes	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
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.	● A National Cybersecurity Strategy Guide is under completion through a fifteen (15) member partnership selected for their strong contribution in this area. ● This Guide will be used by ITU and other NCS partners to assist Member states with a standard coordinated approach where resources will be optimized and overlaps removed.	● Use of the Guide and of an assessment tool for implementing or reviewing National Cybersecurity Strategies in all countries making requests. ● A practice guide for Critical Information Infrastructure protection.	● Number of countries with national strategies and policies related to cybersecurity. ● Number of countries with cybersecurity legal frameworks in place.	● National Cybersecurity Strategy for Swaziland. ● Caribbean Schools Cyber Security Awareness Workshops on policy and regulations. ● Workshop and national strategy assessment in Niger. ● Cybersecurity Policy and legislation in Nepal.
D.3-2 Enhanced ability of Member States to respond to cyber threats in a timely manner.	● ITU CIRT programme finalized and operational ● Consolidated formal cooperation with major CIRT/CSIRT international initiatives. ● Established CIRTs in countries and executed cyberdrills including hands-on training.	● ITU CIRT Framework fully integrated with internationally recognized CIRT affiliation processes (e.g. FIRST, TF-CSIRT, regional CSIRT associations). ● CIRT assessments, establishments and improvements continued for countries requesting assistance.	● Number of CIRTs established and affiliated to international associations and/or fora. ● Number of countries establishing CIRT-to-CIRT cooperation.	● 4 regional cyberdrills and 1 national cyberdrill executed. ● Project signed with DOCA Australia on CIRT related assistance for 4 countries in the Pacific. ● Project signed with Zimbabwe to establish national CIRT. ● CIRT assessment undertaken in Bosnia Herzegovina, Namibia, Mali. ● Deployed Threat intelligence solution in Kenya.
Outcomes (Ctn'd)	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators

D.3-3 Enhanced cooperation, information exchange and know-how transfer among Member States and with relevant players.	• Cooperation through active engagement in international initiatives (e.g. FIRST, GFCE), WSIS related events, ITU-D Study Groups.	• Information dissemination approach and outcome reviewed. • A scalable online data sharing facility for GCI and NCS partners. • An enhanced set of partners for information dissemination and for technical information dissemination through an online approach.	• Number of Member States involved in global initiatives related to cybersecurity. • Number of Member States participating in international dialogues and debates related to cybersecurity, as well as in the work of technical organizations and associations.	• One hundred and thirty-six (136) Member States participated in Global Cybersecurity Index survey questionnaire published in 2017. • 120,000 downloads of the GCI global report. • Eighty (80) countries participated in various workshops, events and cyberdrills.

RESULTS ASSESSMENT

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
• 6 Regional Meetings and related mechanisms executed by BDT in coordination and collaboration with Regional Organizations. • Enhanced harmonization at regional and interregional level.	• 4 regional cyberdrills and 3 regional events organized.	• Number of Regional Meetings and related mechanisms executed by BDT in coordination and collaboration with Regional Organizations.	• Ensured participation of more than 80 countries. • Regional organizations in each regional where the drills and the events took place were co-organizers or strategic partners.
• 60% of Member States have CIRT established and cooperating with each other. • Facilitated regional and sub-regional cooperation among CIRTs. • Needs assessment performed in 10 countries.	• 60% of Member States have a National CIRT also thanks to BDT assistance. Facilitated affiliation to FIRST of 5 national CIRTS. • Executed cyberdrills and organized regional dialogues to foster cooperation among CIRTs/CSIRTs.	• Number of Member States assisted in establishing the CIRT. • Number of Regional Meetings / Cyber Drills involving national CIRTs • Needs assessment performed.	• 4 regional cyberdrills and 1 national drill executed. • 3 CIRT assessments, more than 15 countries assisted on COP, legal measures and with hands-on training. • 2 projects signed on CIRT establishment in 5 countries. • CYPRUS CIRT finalized.
• Global Forum on cybersecurity Organized. • ITU global online cybersecurity services launched. • Annual Interactive Global Cybersecurity Index (GCI) & country profiles produced. • 120 Member States participate in GCI.	• BDT Cybersecurity Service Catalogue developed and made available. • GCI v2 report published.	• Number of countries participating at the Global Forum. • Number of Member States participating in GCI.	• 136 Member States participated in GCI.

THREAT AND RISK ASSESSMENT

Perspective	Risk reported	Impact reported	Mitigation measures implemented
1. Finance	Budget constraints	Negotiation with sponsors	• Cost of events shared with sponsors
2. Competency/ Knowledge	Lack of information provided by the countries	Low commitment of countries	• Close follow up
3. Stakeholders/ Partners	Lack of interest	Delays in decision of partners	• Close follow up

Output 3.2
ICT applications and service

The proven contribution of ICTs to national socio-economic development has been the subject of numerous studies. ICTs and associated applications, including mobile applications, which have come to be known as "e government", "e agriculture", "e education", "e health", "e entrepreneurship", etc., contribute to development by enabling access to and exchange mof information and services anywhere and anytime, by supporting the rapid processing and storage of information and by improving the provision of public and private services, including education and professional development, health, transport, industry, human rights, environmental protection, trade, road safety, urban management, transfer of information for social welfare, agriculture information and services, government services, entertainment, information services, and commerce in general, making them much more effective, efficient, accessible and affordable, especially for poor and marginalized populations. ICTs also enhance access to markets, and increasingly facilitate direct democratic participation. They provide more cost-efficient and effective ways to preserve and promote local culture. They not only bring down the costs of economic and social activities, for example by replacing transport and postal services, but open up entirely new business opportunities.

ICT applications and services are an important demand-side driver that can encourage the adoption of broadband services and can create a virtuous circle for broadband infrastructure development, where new types of content and applications drive an ever-increasing need for more bandwidth. It is well recognized that access to broadband networks and services is critical to countries' economic growth. Broadband is essential for generating new skills and fueling economic growth and technological change across all sectors and for opening up a whole range of new applications and opportunities to better serve citizens' needs. In order to associate broadband with sustainable development, it is necessary to promote both ICT infrastructure development and ICT utilization and application in parallel.

The added value of ICT applications and services is also greatly increasing due to several technological advances that have been achieved in the field of telecommunication/ICT infrastructure, including cloud computing, the Internet of things (IoT), high-volume data exchange, and machine to-machine (M2M) communications in addition to spectacular developments in the field of public consumer applications such as social network media.

For ICT for Development initiatives, however, there has long been a realization that building information societies requires an ecosystem approach, supporting elements of which include an enabling environment, infrastructure build-out, capacity building and broad availability of ICT applications and services.

In order to take advantage of the potential benefits of the progress that has been made, developing countries need capacity and information on strategies, best practices, sources of expertise and financial support, as well as on the types of applications and technological platforms for e applications that would provide the most benefits to their citizens, based on the country's needs and current capabilities.

2017 Implementation

Outcomes	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
D.3-4 Improved capacity of countries for the planning of national sectoral e-strategies to foster the enabling environment for upscaling ICT applications.	• Cooperation Agreement was signed with FAO to reinforce the working relationship on e-Agriculture issues including the development of e-Agriculture strategies. • Technical Assistance was provided towards development of the e-Agriculture Strategy for Sri Lanka, Fiji, Philippines and Papua New Guinea and the national E-Renewable Natural Resources Master Plan for Bhutan. • A regional eHealth strategy development was co-organized with WHO for the Eastern Mediterranean Region. • Built capacities of policy-makers of Arab region in formulating national strategies for smart learning through the implementation of the signed cooperation agreement with the Telecommunication Regulatory Authority of the United Arab Emirates and the Mohamed Bin Rashid Smart Learning Programme.	• At least ten (10) countries have developed/updated their national e-sectoral strategies.	• Number of countries that developed/updated their national e-sectoral strategies (e.g. eHealth, eAgriculture).	• Five (5) countries assisted in developing national eAgriculture strategies in Asia-Pacific region. • E-agriculture strategies / E-RNR Master Plans approved for Bhutan and Sri Lanka. Ongoing assistance to Fiji, PNG and Philippines. • Three (3) countries assisted in developing national eHealth strategies. • Built awareness and capacity of around one twenty (20) countries in the area of e-agriculture, e-Health and Smart Learning strategy development.

Outcomes (Ctn'd)	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
	• The first capacity building workshop took place in Dubai from 26-28 February 2017 with the participation of 18 participants from 10 countries.			
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.	• A mHealth Knowledge and Innovation Hub project was launched by WHO-ITU (2017-2021) with financial support from the European Commission (EC). • Horizon2020 Programme: the Hub will enable both the development of national mHealth interventions in selected EU member states to champion the uptake of mHealth and the foundation and maintenance of a centralised "Knowledge and Innovations Hub for mHealth. • A joint effort was launched with WHO African Region to scale up Digital Health services in Africa. The partnership will focus on building a capable workforce to effectively use ICT as well as addressing the need of multi-stakeholders partnership models.	• At least ten (10) countries have launched value-added services for ICT/mobile services for development.	• Number of countries that launched value-added ICT/mobile services for development.	• Ten (10) countries assisted in launching mHealth services.

Outcomes (Ctn'd)	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
	• Be He@lthy, Be Mobile is a another global joint 2012 initiative between ITU and WHO to work with governments to identify and scale up evidence-based interventions in order to use m-health to address non-communicable diseases and their associated risk factors. • Currently provides technical and financial support to programmes in the following countries India, Norway, the Philippines, Senegal, Tunisia, Egypt, the United Kingdom and Zambia. across a range of income groups and disease areas, including mSmokingCessation, mDiabetes, mCervicalCancer and mCOPD (COPD: chronic obstructive pulmonary disease). • Assistance was provided to Zimbabwe through an infrastructure and equipment audit to extend telemedicine services in remote areas of the country, as well as in-country training.			

Outcomes (Ctn'd)	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
D.3-6 Enhanced innovation, knowledge and skills of national institutions to use ICT and broadband for development.	• Guidelines on the use of mobile applications for smoking cessation, diabetes prevention and control and cervical cancer were developed in collaboration with WHO. • A "Toolkit and Implementation Guidelines for a Digital Health Platform" was developed to guide decision makers and health planners in designing and implementing a national "digital health platform". • A Joint UNESCO-ITU "Policy Forum on Mobile Learning" was held on 24 March 2017 attracting over 300 participants and stressed on the importance of cross-sectoral collaborations in developing the necessary E-skills. • An ITU-Telecom Regulatory Authority of India (TRAI) training on "Leveraging ICTs for Smart Sustainable Cities" in addition to a national symposium on "ICT Regulatory challenges in Indian Smart Cities" held on 24-26 March 2015 raised awareness among more than 190 participants on the latest trends in smart city developments.	• At least 50 institutions with enhanced knowledge on ICT-for-development issues. • At least 100 countries participating in international/regional ICT-for-development events.	• Number of institutions with enhanced knowledge on ICT-for-development issues. • Number of countries and other stakeholders participating in international/regional ICT-for-development events.	• More than 50 institutions participated in international/regional ICT-for-development events. • More than 50 countries participated in experiences sharing events.

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
• Regional capacity building workshops held for e-sectoral strategies e.g. e-Agriculture, e-Health, e-Education, etc. • New Toolkit published for e-sectoral strategy development e.g., Smart Cities/Societies.	• Regional workshop organized for Smart Learning strategy development in Arab Region. • Countries assisted to develop e-sectoral strategies : E-agriculture strategies in Bhutan, Sri Lanka, Fiji, PNG and Philippines. • Country assisted for eHealth Strategy development: Senegal. • Strategy development guidelines developed for agriculture and Smart Learning.	• At least 1 regional workshop held. • At least 5 countries participating in capacity building event • At least 1 new toolkit published.	• One (1) regional workshop organized for Smart Learning strategy development. • Five (5) countries were assisted to develop their e-sectoral strategies : E-agriculture strategies developed for Bhutan, Sri Lanka, Fiji, PNG and Philippines. • One (1) country assisted for eHealth Strategy development: Senegal. • Two (2) strategy development guidelines developed for agriculture and Smart Learning.
• Partnership agreements signed with key relevant partners. • Project proposals developed for new emerging innovative ICT Applications areas.	• New partnership agreements signed with EU, WHO and FAO. • Countries project proposals developed in collaboration with key stakeholders.	• At least 1 partnership agreement signed. • At least 2 countries project proposals developed and funded.	• Three (3) cooperation and co-publishing agreements were signed with EU, WHO and FAO. • Two (2) countries project proposals developed and funded.
• ICT Applications best practices report published. • Knowledge sharing events held for ICT for Development. • Increased number of ITU-D Study Groups ICT Applications related contributions.	• New ICT Applications best practices published in health, agriculture areas. • Several knowledge sharing events organized in collaboration with UN and other private sector/academia institutions.	• At least 1 report published and promoted on Innovative ICT Applications for Development. • At least 1 global/regional event ICT for Development held with more than 100 participants. • At least 5 new contributions received for each question per meeting.	• Two (2) reports completed and made available for ICT Applications best practices for health and agriculture. • Two (2) high-level global and regional events were organized for Education with UNESCO and for Smart Sustainable Cities.

RESULTS ASSESSMENT

Expected results (Ctn'd)	2017 achieved results	Performance Indicators	2017 Performance data
			• More than 100 participants participants in above events. • Two (2) Study Group questions final reports were published.

Threat and risk assessment

Perspective	Risk reported	Impact reported	Mitigation measures implemented
1. Finance	Lack of funding to sustain mHealth projects in countries	Strong impact was well document through rigorous evaluation	• Additional resources mobilization

2017 On-going projects by region

The table below provides the list of the current on-going Projects for **Objective 3** by Region

Project No	Title	Region
2GAM16002	National CIRT Establishment in The Gambia	Africa
7ZIM15007	Extension of Telemedicine to cover remote Areas in Zimbabwe	Africa
9BDI12011	National CIRT Establishment in Burundi	Africa
9KEN15006	Enhanced Kenya CIRT/CC	Africa
9ZIM17008	National CIRT Establishment	Africa
9GLO13072-04	m Health for Strengthening National Diabetes Prevention and control in Tunesia	Arab States
9RAS17059	Cybersecurity in Pacific Island Countries	Asia & Pacific
9CYP17002	National CIRT Establishment in Cyprus	Europe
9GLO16082	mHealth for non-communicable diseases in Norway	World or Multi-Regional
9GLO13072	mHealth for NCDs Joint Programme	World or Multi-Regional

Objective 4

Build human and institutional capacity, provide data and statistics, promote digital inclusion, and provide concentrated assistance to countries in special need

<u>Objective 4</u> includes the following outputs:
– Capacity building
– Telecommunication/ICT statistics
– Digital inclusion of people with specific needs
– Concentrated assistance to LDCs, SIDS and LLDC

For 2017, the actual human resources allocated to objective 4 represent **28.3 per cent** of the total human resources of the Telecommunication Development Bureau.

Chart 6 illustrates the breakdown of the actual allocation of human resources among the four outputs of objective 4.
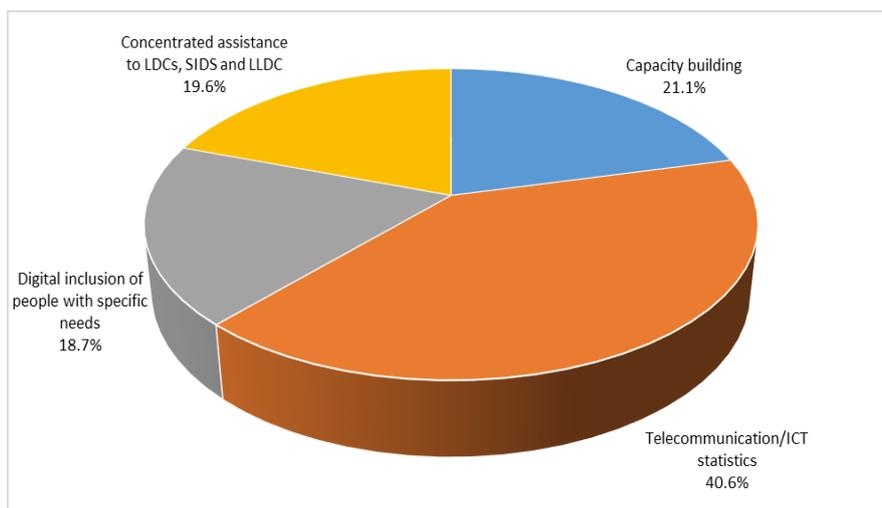
Output 4.1

Capacity building

ITU, as the lead United Nations agency for telecommunication/ICT issues, is an important source of information, education and training in this field. This ITU leadership position carries with it a responsibility to ensure that human and institutional capacity building is of the utmost quality, is available worldwide, and represents the cutting edge of rapidly emerging technologies and changes taking place in the sector. It is thus important to provide opportunities for all, and especially developing countries, to acquire the specialized knowledge and skills they need to engage in and benefit from the telecommunication/ICT sector. This requires the promotion of an enabling environment and supporting the implementation of telecommunication/ICT initiatives.

Capacity building continues to be a cross-cutting issue that informs and enhances the overall ITU D mission. Therefore, it requires cooperation and partnerships between countries and broad stakeholder participation. These partnerships should include, among others, academia, experienced professionals and experts, as well as organizations with relevant expertise in the capacity-building activities.

Telecommunication/ICT-based education and training is particularly fundamental for developing countries. It will help them to improve skills and enable them to establish and develop their national e strategies for sustainable development. Therefore, research undertakings and the development of specialized training programmes in priority areas for the membership are required. Furthermore, the introduction of telecommunications/ICTs into education and human resources development for all groups is needed.

It is also essential to enhance human potential through the use of distance-learning technologies and other developments in telecommunications/ICTs.

To facilitate coordination of its capacity-building support to the membership, ITU has established the ITU Academy, an online platform that integrates all ITU capacity-building activities. The ITU Academy is also enhancing human potential through provision of distance-learning solutions.

Centres of excellence (CoEs) and Internet training centres (ITCs) are equally important platforms for education and information-sharing, which therefore fulfil an important role in ITU capacity-building activities under the ITU Academy.

A new strategy for CoEs has been developed under WTDC 10 Resolution 73. Through this strategy, there is alignment between the training provided and the priorities of the membership as decided at various WTDCs. The strategy takes effect after WTDC 14. ITU has also intensified the development of high-level training materials that will be available to CoEs, academia and other stakeholders. These training programmes are designed in such a manner that they can be delivered by accrediting institutions, leading to certification as part of degree programmes.

Regional, subregional and global forums and other capacity-building events remain important platforms for exchanging and sharing information among all stakeholders. These events provide developing countries with practical skills and hands-on learning, as well as offering opportunities for networking and creation of partnerships.

2017 Implementation

Outcomes	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
D.4-1: Enhanced capacity building of membership in international Internet governance.	• Enhanced capacity in international Internet governance has been achieved through the implementation of a number of training and capacity building activities in Internet governance related topics at the regional level.	• Capacity on international Internet governance enhanced in ITU Member States.	• Number of countries with enhanced capacity in international Internet Governance.	• The regional capacity building events were attended by 89 participants from 27 countries.
D.4-2: Improved knowledge and skills of ITU membership in the use of Telecommunications /ICTs.	• Improved knowledge and skills were achieved through the implementation of training and capacity building activities in the identified priority areas.	• Knowledge and skills enhanced in ITU Member States in identified priority areas.	• Number of countries with improved knowledge and skills in the use of telecommunications / ICTs.	• 64 training activities were implemented in the 6 regions, covering 10 priority areas. • Knowledge and skills improved in 116 Member States.
D.4-3: Enhanced awareness of the role of human and institutional capacity building for telecommunications/ICTs and development for the ITU membership.	• Enhanced awareness of the role of capacity building was achieved through the implementation of regional workshops and the organization of the ITU-Academia Partnership Meeting in Budapest in September 2017.	• Awareness of the role of human and institutional capacity building enhanced in ITU Member States.	• Number of countries made aware of the importance of human and institutional capacity building in their national agenda.	• At least 1 capacity building workshop was held in each region. The ITU-Academia Partnership Meeting was attended by around 90 participants from 32 countries and 36 academic institutions.

RESULTS ASSESSMENT

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
• Awareness on international Internet Governance enhanced in 20% of ITU Member States. • At least 1 training activity or workshop per region delivered.	• Awareness on international Internet Governance related issues was achieved in 27 Member States. • At least 1 capacity building activity on Internet governance was delivered in 2 regions.	• Number of workshops or training Delivered. • Satisfaction level with the workshops or training delivered.	• 2 training activities were delivered, attended by 89 participants from 27 countries. • Overall satisfaction level of the courses was 96%.
• ICT knowledge and skills improved in at least 50 % of ITU Member States in priority areas. • At least 10 training courses developed / updated. • 50 training courses delivered.	• ICT knowledge and skills was improved in 116 Member States in priority areas. • 64 training courses were delivered.	• Number participants trained. • Number of training courses Delivered.	• 64 training courses covering 10 priority areas were delivered in all the 6 regions. • 1551 participants from 116 countries were trained.
• Awareness on the role of human and institutional capacity building for Telecommunications/ICTs and development for the ITU membership enhanced in 50% of ITU Member States. • Global ICT Forum on Human Capacity Development organized. • At least one regional event Organized.	• Awareness on the role of human and institutional capacity building for Telecommunications/ICTs and development for the ITU membership was enhanced in over 84 Member States. • The ITU-Academia Partnership Meeting was organized in Budapest in September 2017. • At least one capacity building event was organized in each region.	• Number of global, regional and sub-regional events organized. • Number and diversity of countries and participants that attended global, regional and sub-regional events. • Satisfaction level with the global, regional and sub-regional events.	• 28 regional capacity building events were organized, attended by 1292 participants.
• Face to face and online courses effectively delivered through the ITU Network of Centres of Excellence.	• 64 training courses were delivered through the CoE network.	• Number of courses delivered. • Number of trainees and level of satisfaction.	• 1551 participants were trained through courses delivered by the CoE network.

Threat and risk assessment

Perspective	Risk reported	Impact reported	Mitigation measures implemented
1. Stakeholders/ Partners	Low level of partnerships in capacity building Low participation level by partners in capacity-building activities Low partner resource allocation	High	• Stakeholder involvement incapacity building program design • Increased partner value proposition in capacity-building programmes
2. Finance	Inadequate budget for desired actions	Medium	• Actions consolidated and focus on those with the highest impact • Mobilization of extra budgetary funding from projects and partnership contributions
3. Human resources	Inadequate staff against expected deliverables	High	• Focus on strategic inputs with high impact
4. Environment	Delays in country activities due to unforeseen local events	Medium	• Enhancement of a responsive implementation mechanisms and improved communication with partners and donors

Output 4.2

Telecommunication/ICT statistics

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 networks become an indispensable infrastructure, the tracking and measurement of developments in telecommunications/ICTs remain as relevant as ever. While there will be almost 7 billion mobile cellular subscriptions globally and close to 3 billion people using the Internet worldwide by the end of 2014, there are still more than 4 billion people who are not yet connected to the Internet, mostly those living in rural areas of developing countries, for whom broadband Internet services are still unavailable or unaffordable.

ITU is recognized all over the world as the main source of internationally comparable data and statistics on telecommunications/ICTs. The statistical standards, definitions and methodologies developed by ITU are widely used by countries in their production of telecommunication/ICT statistics. Reliable, comprehensive and comparable statistics are indispensable to identify progress and gaps, track

information-society developments at the national and global levels and support government and industry in making informed and strategic decisions to ensure equal access, use and impact of telecommunications/ICTs.

While the availability of comparable telecommunication/ICT statistics has considerably improved in recent years, major data gaps remain, in particular in developing countries, and in covering important areas such as measuring broadband speed and quality, international Internet bandwidth, investment and revenue in the ICT sector, household access to ICTs, individuals' use of ICTs, or gender equality in access and use of ICTs and access to ICTs by persons with disabilities. Countries are therefore encouraged to produce high-quality data based on internationally agreed standards and methodologies, which illustrate national digital divides as well as the efforts made through various programmes to close the gap, showing, as much as possible, the social and economic impact.

2017 Implementation

Outcomes	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
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.	● Enhanced information and knowledge has been achieved through the release of the World Telecommunication/ICT Indicators Database, the Measuring the Information Society Report 2017, the Yearbook of Statistics, and other statistical products.	● 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.	● Number of countries and other stakeholders using internationally comparable telecommunication/ICT statistics for policy making and analysis.	● The statistics website is the most visited website of the BDT, with more than 1.8 million views in 2017. ● In 2017, the Measuring the Information Society Report has been downloaded over 80,000 times (different editions), and the ICT Facts and Figures more than 150,000 times (different editions).
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.	● Enhanced dialogue has been achieved through: - The work of the Expert Group on ICT Household Indicators (EGH) and the Expert Group on Telecommunication/ICT Indicators (EGTI). - Th.Extraordinary Meeting of the EGTI/EGH on indicators to be included in IDI. - The organization of the 15th World Telecommunication/ICT Indicators Symposium (WTIS-17).	● 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.	● Number of countries participating in ITU ICT measurement events, including the World Telecommunication/ICT Indicators Symposium (WTIS). ● Number of countries Producing telecommunication/ICT statistics based on international standards and methodologies.	● The 15th WTIS was attended by around 420 participants from 74 countries. ● The meetings of the two Expert Groups (EGTI/EGH) were attended by around 100 participants from 48 countries. ● The Extraordinary Meeting of the EGTI/EGH adopted a total of 14 indicators to be included in the IDI. ● 175 countries produced at least some ICT statistics based on international standards.

RESULTS ASSESSMENT

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
• Enhanced availability of internationally comparable, timely ICT statistical databases. • Accurate analysis of information society developments available.	• Enhanced availability of ICT statistics by releasing updated WTI database in July 2017 and December 2017, and regularly updated online statistics (including on ICT Eye). • Yearbook of Statistics and the Little Data Book on ICT released December in 2017. • Enhanced knowledge and analysis was achieved by producing and publishing the Measuring the Information Society Report 2017, including the ICT Development Index.	• Timely release of ITU WTI Database. • Number of country-level data points and indicators available in ITU WTI database. • Number of downloads, citations, website hits and/or purchases of BDT statistical and research products and online resources.	• WTI database released as scheduled (June and December 2017). • Around 19,000 data points included in the 2017 version of the database, and about 200 indicators. • Around 220 copies of the database were sold in 2017. • The statistics website is the most visited website of the BDT, with more than 1.8 million views in 2017. • In 2017, the Measuring the Information Society Report (MISR) has been downloaded over 80,000 times (different editions), and the ICT Facts and Figures around 150,000 times (different editions). • MISR 2017 widely covered by the media.
• World Telecommunication/ICT Indicators Symposium work of the statistical Expert Groups implemented successfully. • Capacity building on telecommunication/ICT statistics based on international standards and methodologies provided to countries.	• The Extraordinary Meeting of the EGTI/EGH on indicators to be included in IDI (March, 2017). • Face-to-face meetings of the two Expert Groups were held (October 2017). • The 15th WTIS successfully held in Hammamet, Tunisia (November 2017).	• Number of countries trained or advised on telecommunication/ICT statistics by BDT. • Number of participants in the ITU World Telecommunication/ICT Indicators Symposium and in statistical expert groups.	• National workshop in Huye, Rwanda attended 19 participants. • National workshop in Ulaanbaatar, Mongolia, attended by more than 120 participants. • The ITU Asia-Pacific Regional Workshop attended more than 60 participants from 20 countries.

Expected results (Ctn'd)	2017 achieved results	Performance Indicators	2017 Performance data
	• National workshop in Huye, Rwanda attended 19 participants. • National workshop in Ulaanbaatar, Mongolia, attended more than 120 participants. • The ITU Asia-Pacific Regional Workshop attended more than 60 participants from 20 countries.		

Note: All PI (e.g. number of copies sold, downloads, etc.) Statistics are as of Nov-2017. Should be updated after end of the year.

Threat and risk assessment

Perspective	Risk reported	Impact reported	Mitigation measures implemented
1. Finance	Lack of resources to provide the appropriate support level in case of high demand from countries	Medium	• Appropriate budget forecast prepared • Mobilize additional resources, if necessary • Appropriate host country agreement negotiated
2. Human resources	Insufficient human resources to cope with demand. Lack of qualified experts in the domains concerned	Medium	• Resource requirements anticipated and recruitment procedures initiated as soon as possible
3. Stakeholders / Partners	Insufficient commitment of countries and partners	High	• Cooperation with countries and partners ensured to guarantee appropriate level of involvement

Output 4.3

Digital inclusion of people with specific needs

Digital inclusion means ensuring the accessibility of telecommunications/ICTs and the use of telecommunications/ICTs for the social and economic development of people with specific needs.

Despite the increasing deployment of telecommunication/ICT networks, equipment and applications, many people remain excluded from the information society. Furthermore, telecommunications/ICTs are not exploited to promote economic and social development of women and girls, persons with disabilities, including age-related disabilities, youth, children and indigenous peoples, who have specific needs that must be addressed to enable them to use telecommunications/ICTs. Special measures are required to ensure the inclusion of people with specific needs in the information society and to promote their social and economic development through telecommunications/ICTs.

Globally, fewer women than men have access to telecommunications/ICTs, in particular access to the Internet and broadband services. This gender divide is more apparent in developing countries. There is a need for national strategies to ensure that women and men enjoy equal access to telecommunications/ICTs, and that telecommunications/ICTs can be used for the social and economic empowerment of women and girls.

People with specific needs often face barriers to using telecommunications/ICTs. Persons with disabilities, including age-related disabilities, require accessible telecommunications/ICTs (including mobile phones, tablets, computers, websites and TVs) that they can perceive and understand and on which they can input commands. Legal, policy, regulatory and business practices can be implemented to ensure that accessible telecommunications/ICTs are widely available and affordable for persons with disabilities in ITU Member States.

Youth, women, persons with disabilities, including age-related disabilities, and indigenous peoples often require training in both basic and advanced digital literacy skills in order to participate actively in the information society. Despite the rise of digital natives in developing countries, the majority of youth worldwide are not currently digital natives. Once equipped with telecommunication/ICT skills, people with specific needs can harness the power of telecommunications/ICTs for their empowerment, including employment, entrepreneurship and lifelong learning. This is especially timely in the face of global youth unemployment and the skills mismatch between what youth learn in school and the telecommunication/ICT skills sought by employers, as well as the gender divide in telecommunication/ICT skills development. Young people can develop these skills where they are incorporated into national education plans and where schools are connected to the Internet, equipped with ICTs and possess teachers trained to impart such skills.

Such skills can also be developed in community ICT centres, including those funded by universal service/access funds. Community access strategies are at a crossroads, moving from mere provision of Internet access and basic digital literacy training to development of innovation hubs, where members of the community create their own telecommunication/ICT solutions to social and economic challenges. Likewise, universal access/service mandates and funds require updating to ensure they are used to promote accessibility and digital inclusion of people with specific needs. Using telecommunications/ICTs to ensure the digital inclusion of all peoples for social and economic development requires comprehensive national digital inclusion policies, strategies and guidelines, as well as national broadband plans that promote accessibility and digital inclusion of people with specific needs.

2017 Implementation

Outcomes	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
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.	• Over 1,000 ITU members and stakeholders were made aware or had their capacity built in ICT accessibility policies, strategies, guidelines and good practices. • Assistance was provided to Egypt to develop a national ICT accessibility policy. • A national training programme on web accessibility, Internet for @ll, was delivered in a train-the-trainers model in Costa Rica to 66 trainers in addition to a political buy-in seminar for decision makers from the regulator, Ministry and university.	• New Outcome for 2020 based on WTDC-17 is: Number of members aware of, trained in or advised on digital inclusion policies, strategies and guidelines. • Target 2020: 100 ITU Members.	• Number of countries with strengthened capacity to develop and implement digital inclusion policies and strategies.	• Over 100 countries.

Outcomes (Ctn'd)	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
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.	• Over 200 digital inclusion programmes and practices, including on digital literacy training and training on the use of telecommunications/ICTs for social and economic development shared on the ITU Digital Inclusion Newslog.	• New Outcome for 2020 based on WTDC-17 is: Number of members aware of, trained in or advised on digital inclusion policies, strategies and guidelines. • Target 2020: 100 ITU Members.	• Number of countries with improved capacity to provide people with specific needs digital literacy training and training on the use of telecommunications/ICTs for social and economic development.	• 7,000 views of the Digital Inclusion Newslog.
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.	• 200 stakeholders from at least 40 countries improved their capacity on digital skills for youth employment in the June 2017 WSIS Forum High Level Dialogue on Digital Skills for Decent Jobs for Youth, during which job-ready digital skills strategies from Bangladesh, Kenya, Portugal, Rwanda and Google were shared.	• New Outcome for 2020 based on WTDC-17 is: Number of members aware of, trained in or advised on digital inclusion policies, strategies and guidelines. • Target 2020: 100 ITU Members.	• Number of countries with improved capacity 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.	• 40 countries.

RESULTS ASSESSMENT

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
• Training/capacity building on designing and implementing digital inclusion policies, strategies/guidelines developed. • ITU-D Study Group platform identifies best practices for ICT accessibility policies and solutions.	• BDT developed a National Capacity Building Program on Web Accessibility "Internet for @ll" composed by a political buy-in session at national level followed by 2 face-to face train the trainers courses on "Accessible Digital Content and Remediation" and "Designing and Developing Accessible Websites". • ITU-D Study Group Question 7/1 identified best practices for ICT accessibility policies and solutions.	• Number of stakeholders trained/capacity built. • Identification of best practices for ICT accessibility policies and solutions by ITU-D Study Groups.	• More than 70 stakeholders Trained. • Best practices identified.
• Support to the UN Global Initiative on Decent Jobs for Youth • Promote and share strategies to members on digital literacy and digital skills.	• The joint ITU-ILO Digital Skills for Decent Jobs for Youth campaign, to train 5 million young people with job-ready digital skills, was launched at the 2017 WSIS Forum. • Over 1,500 views of the Youth Resources Database of training opportunities, crowd funding, mentoring networks and job-matching services.	• Number of trainers and members trained.	• Awareness raised among 200 stakeholders at WSIS Forum. • Over 1,500 views of the Youth Resources Database.
• Capacity building provided on digital inclusion programme development. • Girls and young women encouraged to prepare for and enter ICT careers. • Information shared with	• The capacity of 134 countries to develop and implement digital inclusion policies, strategies, practices and guidelines to ensure the use of telecommunications/ICTs for the social and economic empowerment of people with	• Number of participants in capacity building/training events. • Number of girls and young women encouraged to prepare for and enter ICT careers. • Number of digital inclusion programmes and practices shared.	• 134 countries. • 70,000 girls. • 63 million Twitter accounts reached.

Expected results (Ctn'd)	2017 achieved results	Performance Indicators	2017 Performance data
• telecommunication/ICT stakeholders on the use of telecommunications/ICTs to promote economic and social development of people with specific needs.	specific needs, in particular, women and girls, was improved through International Girls in ICT Day in which some 70,000 girls were empowered to consider careers in ICT. Awareness was raised among tens of millions of people on the importance of encouraging girls and young women to take up ICT careers and studies through the #GirlsinICT hashtag which reached over 63 million Twitter accounts.	• Number of website hits.	

Threat and risk assessment

Perspective	Risk reported	Impact reported	Mitigation measures implemented
1. Finance	Lack of resources to provide the appropriate support level in case of high demand from countries	Medium	• Appropriate budget forecast prepared • Mobilize additional resources, if necessary • Appropriate host country agreement negotiated
2. Human resources	Insufficient human resources to cope with demand. Lack of qualified experts in the domains concerned	High	• Resource requirements anticipated and recruitment procedures initiated as soon as possible
3. Stakeholders /Partners	Insufficient commitment of countries and partners	High	• Cooperation with countries and partners ensured to guarantee appropriate level of involvement

Output 4.4

Concentrated assistance to LDCs, SIDS and LLDCs including countries in special need

ITU assistance to the least developed countries (LDCs) goes back to 1971, when the Union accorded special assistance to LDCs through the implementation of relevant plenipotentiary conference resolutions. In 2002, direct assistance to LDCs was delivered for the first time to a small group of countries on a biennial basis. This assistance facilitated monitoring and evaluation of the impact made by the concentrated assistance to beneficiary countries. In 2006, the programme was expanded to include small island developing states (SIDS) and emergency telecommunications. In 2010, WTDC (Hyderabad, 2010) approved the inclusion of landlocked developing countries (LLDCs) and countries with economies in transition in this programme. Every decade, the United Nations holds a special conference on LDCs, SIDS and LLDCs. For the decade 2004-2014, the Fourth United Nations Conference on LDCs was held in Turkey in 2011, and adopted the Istanbul Programme of Action (IPoA). In 2014, the Third International Conference on Small Island Developing States held from 1- 4 September 2014 in Apia, Samoa endorsed " The Small Island Developing States Accelerated Modalities of Action" (Samoa Pathway).

The United Nations Conference on the Landlocked developing countries (LLDCs) took place in Vienna Austria on 3-5 November 2014. The conference adopted the Vienna Programme of Action for the LLDCs

Output 4.4 delivers targeted and highly differentiated assistance to countries with specific needs, including LDCs, SIDS, LLDCs and countries with economies in transition, in a number of priority areas.

WTDC Resolution 16 (Rev. Hyderabad 2010) and Resolution 30 (Guadalajara, 2010) of the Plenipotentiary Conference, on special measures for LDCs, SIDS, LLDCs and countries with economies in transition. highlight the role of ICTs as enablers of national socio-economic development. Resolution 200 (Busan, 2014) of the Plenipotentiary Conference on Connect 2020 Agenda calls for "15% of households in the LDCs to have access to the Internet by 2020 and 20% of people should be using the Internet by 2020." The resolutions provide BDT with a mandate to pay special attention to these categories of countries through concentrated assistance.

BDT is committed to fulfilling its mandate and striving to reach its commitments under the IPoA in regard to ICTs for LDCs, the Samoa Pathway and APoA for LLDCs. Each of these plans of action were mainstreamed into the Dubai Action Plan.

Outcomes	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
D.4-9: Improved access to and use of telecommunications/ICTs in LDCs, SIDS, LLDCs and countries with economies in transition.	• ITU assisted Somalia through an ITU-MPTT-World Bank National Workshop on Numbering Planning and Policies. • Implemented remote education facilities to support capacity building in rural and remote areas of the Kyrgyz Republic. • ITU assisted Tanzania in the development of its ICT Commission Strategic Plan. • Country case studies were produced for the American LLDS: Bolivia and Paraguay. • A global report on ICTs, LDCs, and the SDGs: Universal and affordable Internet in the least developed countries 2017 was launched. • Several African LDCs were assisted in their celebrations of Girls in ICT Day.	• At least 30% of LDCs, SIDS, LLDCs and economies in transition received concentrated assistance with improved access to and use of telecommunications/ICTs.	• Number of concerned countries with improved access to and use of telecommunications/ICTs.	• 9 countries received concentrated assistance: Fiji Kyrgyzstan Myanmar Somalia Sudan Suriname Tanzania Timor-Leste

Outcomes	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
D.4-10: Enhanced capacity of LDCs, SIDS and LLDCs on telecommunication/ICT development.	• Provided training in capacity building on the use of Emergency telecommunication equipment in Zimbabwe, Haiti, Dominica, and Antigua&BarbudaA Cyber security workshop and cyber drill was carried out in Suriname and included representatives from other Caribbean countries.Several Arab LDCs were trained on IPv6 through a regional training programme.	• At least 40% of Ministries of ICTs and offices of regulators in LDCs, SIDS, LLDCs and countries with economies in transition have enhanced capacity on telecommunication/ICT development.	• Number of concerned countries with improved telecommunication/ICT development.	• 9 countries received concentrated assistance: Fiji Kyrgyzstan Myanmar Somalia Sudan Suriname Tanzania Timor-Leste

RESULTS ASSESSMENT

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
● At least 40% of LDCs, SIDS, LLDCs and economies in transition received concentrated assistance with improved access to and use of telecommunications/ICTs.	● Greater access to ICTs and better information on ICT develoments through new remote education facilities in Kyrgyzstan, support for Girls in ICT Day in several African countires, the development of an ICT Strategic Plan in Tanzania, two country case studies (Bolivia and Paraguay) and a global ICT report on the LDCs.	● Number of Member States that received concentrated assistance from BDT on their priority needs.	● 9 countries received concentrated assistance.
● At least 60% of Ministries of ICTs and offices of regulators in LDCs, SIDS, LLDCs, and countries with economies in transition with enhanced capacity on telecommunication/ICT development.	● Trainings delivered in the areas of IPv6, radio regulations, numbering planning and policies, competency based performance appraisal system, cybersecurity.	● Number of individuals from concerned countries trained in telecommunication/ICT.	● At least 150 were people trained.

Threat and risk assessment

Perspective	Risk reported	Impact reported	Mitigation measures implemented
1. Stakeholders/ Partners	Lack of partners on the field of the topic	High	• Engagement improved with various partners dealing with ICT related projects and activities for LDCs, SIDS, LLDCs
2. Finance	Lack of resources to provide the appropriate support to Member States	High	• Improvement of partner's involvement to implement projects when required in order to meet the needs of the country
3. Human resources	Lack of staff exposure to issues related to the topic	Medium	• Support of staff participation to various events and discussions related to the topic in order to enhance capacity of the division and engagement of external consultants and partners

2017 On-going projects by region

The table below provides the list of the current on-going projects for **Objective 4** by region

Project No	Title	Region
2KEN16007	Capacity Building of Kenya Judiciary in ICT Laws Interpretation and Application	Africa
7RAB16025	Regional Center ICT Accessibility for Persons with Disabilities	Arab States
9RAB15024	ICT Cooperation and partnership-TRA-UAE	Arab States
9RAS17056	Capacity Building for Countering Misappropriation of Telephone Numbers in Pacific Island Countries	Asia & Pacific
9THA17035	ITU NBTC Training Programme 2017	Asia & Pacific
9RAS15053	ICB4PAC II	Asia & Pacific
9GLO15077	eMCM Master of Communications Management	World or Multi-Regional
COEGLO001	Capacity Building through Centres of Excellence (CoEs)	World or Multi-Regional
2GLO16079	ICT-Eye: keeping an eye on ICT data	World or Multi-Regional
2GLO16081	Big Data for Measuring the Information Society	World or Multi-Regional

Objective 5

Enhance environmental protection, climate-change adaptation and mitigation and disaster-management efforts through telecommunications/ICT

<u>Objective 5</u> includes the following output:
–   ICTs and climate-change adaptation and mitigation
–   Emergency telecommunications

For 2017, the actual human resources allocated to objective 5 represent **8.1 per cent** of the total human resources of the Telecommunication Development Bureau.

Chart 7 illustrates the breakdown of the actual allocation of human resources among the two outputs of objective 5.
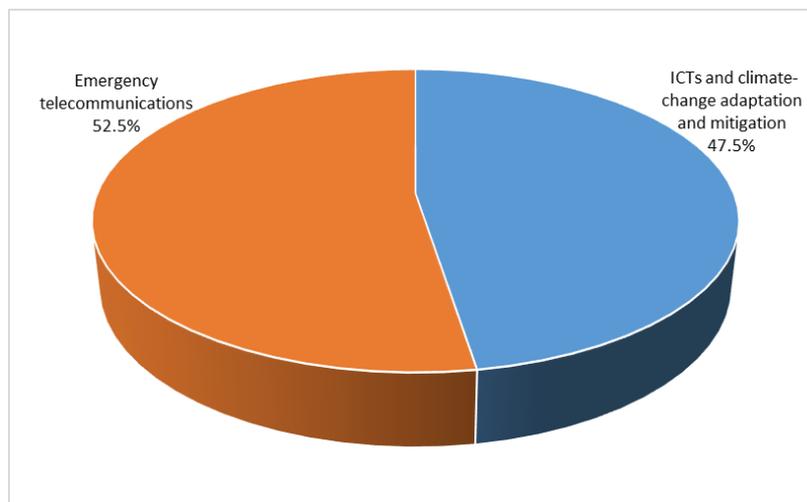
Output 5.1

ICTs and climate-change adaptation and mitigation

The process established by the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC) and the ongoing negotiations of its Intergovernmental Negotiating Committee are important international actions aimed at addressing the threat of climate change, mitigating its adverse impacts and assisting all ITU Member States. Climate change will see climate/weather-related events occurring more frequently and having an intense impact on water resources, land use and marine ecosystems, thus in turn affecting the economies of all ITU Member States.

The critical importance of using telecommunications/ICTs to mitigate climate change and adapt to its adverse impact is widely recognized. This is why Member States should share best practices regarding sustainable telecommunication/ICT development and take into account the positive contribution of telecommunications/ICTs for sustainable development in other sectors of the economy.

2017 Implementation

Outcomes	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
D.5-1 Improved availability of information and solutions for Member States, regarding climate-change mitigation and adaptation.	• Implementation of an early warning system (EWS) project in Zambia. • Trainings delivered during emergency telecommunications equipment deployments in the areas of climate change & emergency telecommunications.	• 30% of all Member States with improved availability of information solutions regarding climate change adaptation and mitigation.	• Number of countries with enhanced awareness of solutions regarding climate change adaptation and mitigation.	• Enhanced awareness of solutions regarding climate change adaptation and mitigation for 5 countries. Completion of an EWS in Zambia. • Capacity building workshops during emergency telecommunication deployments in Zimbabwe, Haiti, Dominica, Antigua & Barbuda.
D.5-2 Enhanced capacity of Member States in relation to climate-change mitigation and adaptation policy and regulatory frameworks.	• Development of training materials on ICTs and Climate Change. • EWS training delivered in Zambia. • Trainings delivered during emergency telecommunications equipment deployments in the areas of climate change & emergency telecommunications. • Regional Forum on Internet of Things for Development of Smart Sustainable Cities in Arab Region.		• Number of countries with improved capacity in relation to climate change adaptation and mitigation policy and regulatory frameworks.	• Assistance delivered to at least 15 Members States on ICT climate change mitigation and adaptation policy and regulatory frameworks. • More than 90 people trained during workshops and training on technical issues and policy and regulatory frameworks.

Outcomes	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
	• Regional Training Workshop on ICT and Climate Change Mitigation and Adaptation in Arab Region (20 trained). • Regional Workshop on Prospects of Smart Water Management in Arab Region.			
D.5-3 Development of e-waste policy.	• Development of a report to design an e-waste policy and regulatory framework for Malawi. • Publication on Successful Electronic Waste Management Initiatives providing an overview of existing effective WEEE management initiatives and sound management of e-waste. • Assessment study on e-waste capacity building needs in Africa. • Publication of Global E-waste Monitor 2017.		• Number of countries with e-waste policies developed.	• One country with e-waste policy. • Successful e-waste management initiatives, assessment study and Global E-waste Monitor will help Member States establish effective environmental frameworks in the area of e-waste.

RESULTS ASSESSMENT

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
• At least 40% increase in the 2015 baseline assessment on the number of Member States with improved availability of information and solutions for Member States, regarding climate change adaptation and mitigation.	• Implementation of Zambia project provides two early warning systems (EWS) to be used for monitoring and disseminating alerts on floods and impending disasters. • Workshops during emergency telecommunication equipment deployments.	• Number of Member States assisted by BDT for increasing awareness on the impact of climate change and on promoting the use of telecommunications/ICTs to mitigate its negative effects.	• Assistance provided to at least 5 Member States on ICT climate change mitigation and adaptation policy and regulatory frameworks.
• At least 40% increase in the 2015 baseline assessment on the number of Member States with enhanced capacity of Member States in relation to climate change adaptation and mitigation policy and regulatory frameworks.		• Number of Member States assisted in developing their climate change strategies, policies and legislative frameworks.	• Assistance provided to at least 15 Member States on ICT climate change mitigation and adaptation policy and regulatory frameworks.
• At least 70% of Member States with e-waste policies.		• Number of Member States assisted in developing e-waste strategy, policy and regulatory frameworks.	• Member States will use guidelines to develop national policies, laws and regulation on e-waste; and benefit from best practices and successful e-waste projects.

Threat and risk assessment

Perspective	Risk reported	Impact reported	Mitigation measures implemented
1. Finance	Lack of resources to satisfy all pending requests from the membership	Medium	• Brainstorming on resources mobilization
2. Stakeholder/ Partners	Lack of engagement with partners in the field of climate change	Medium	• Cooperation improved with other organizations to provide necessary support
3. Human Resources	Lack of staff exposure to issues related to the subject	Medium	• Support to staff participation to various events and discussions related to the topic

Output 5.2

Emergency telecommunications

Countries throughout the world are experiencing increased numbers of natural and man-made disasters, with a disproportionate impact on developing countries. LDCs, SIDS and LLDCs are particularly vulnerable to the impact that disasters can have on their economies and infrastructures, and such countries often lack the capacity to respond to disasters.

The critical importance of using telecommunications/ICTs to respond to these devastating phenomena is widely recognized. Because of the role telecommunications/ICTs play in all phases of a disaster – 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 State, effective disaster management may involve the deployment of efforts by more than one country in order to prevent loss of human life and regional crisis. Prior coordination and collaboration among disaster-management experts, including governments, the private sector, international organizations and non-governmental organizations, before disasters increases the probability of saving human life when rescue operations are conducted and thereby mitigates the consequences of a disaster.

Member States should take account of a diverse range of telecommunication/ICT solutions that are appropriate and commonly available for disaster response and mitigation, including those provided by amateur radio services and satellite and terrestrial network services/facilities, taking into account persons with disabilities and specific needs.

2017 Implementation

Outcomes	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
D.5-4. Developed standards-based monitoring and early-warning systems linked to national and regional networks collaboration to facilitate emergency disaster response.	• Implementation of an early warning system (EWS) project in Zambia. • Facilitated emergency disaster response to Member States that requested assistance. • Audit of the Caribbean Regional and Sub Regional Emergency Telecommunication Systems carried out in collaboration with CDEMA to specifically assess the regional and sub regional emergency telecommunication systems.	• At least 65% of Member States have early warning systems and in particular, developing countries. • During disasters facilitate emergency disaster response for Member States requesting support.	• Number of countries with standards-based monitoring and early-warning systems and national emergency telecommunication plans developed. • Number of countries assisted in the case of disasters.	• Zambia received two early-warning systems. • Four countries received emergency telecommunication assistance in response to requests in the case of disasters.
D.5-5 Established partnerships among relevant organizations dealing with the use of telecommunication/ICT systems for the purpose of disaster preparedness, prediction, detection and mitigation.	• Cooperation agreement was signed with the Republic of Korea to deploy a Movable and Deployable ICT Resource Unit (MDRU) for the delivery of emergency telecommunication services.	• At least 60% of Member States have developed National Emergency Telecommunication Plans.	• Number of partnerships established dealing with the use of telecommunication/ICT systems for the purpose of disaster preparedness, prediction, detection and mitigation.	• At least 3 new official partnerships established.

Outcomes (Ctn'd)	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
	• A Letter of Agreement was signed between ITU and UltiSat for the donation of two VSATs to be used for emergency telecommunications, disaster response activities. • A Letter of Intent to Establish an Agreement on "The use of ICTs for emergency and disaster situations in the Americas region" was signed by CITEL, COMTELCA, CTU, and ITU.			
D.5-6 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.	• Second Multi-stakeholder Forum on the Role of Telecommunications/ICT in Disaster Management, took place from 29 to 31 August 2017, in Bogotá, Colombia. The Forum, which was attended by about 400 participants, was organized by the ITU Telecommunication Development Bureau (BDT) and the Ministry of Information Technologies and Communications (MINTIC) of Colombia. The	• At least 45% of Member States ratify the Tampere Convention.	• Number of countries with increased awareness for easy access to, and sharing of, information related to the use of telecommunications/ICTs for emergency situations.	• Six countries received capacity building in the area of emergency telecommunications. • The Second Multi-Stakeholder Forum on the Role of Telecommunications/ICT in Disaster Management was attended by over 400 participants. In total about 600 people attended regional and global events related to the use of ICTs for emergency situations.

Outcomes (Ctn'd)	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
	2017 Forum served as a platform to exchange new experiences and best practices in the use of modern technologies for monitoring and for the establishment of multi-hazard early warning systems. • BDT organized a Training Workshop on Bigdata concepts in the context of emergencies, a technical training on "Server Configuration and Data Collection" (CDR Secure Storage and Analysis) as well as use of ICT applications for humanitarian coordination, such as Tele-Health. The training workshop was attended by 18 participants representing three (3) Member States – Sierra Leone, Liberia and Guinea. • ITU-D organized a Session on 'Bringing the message to communities at risk', during the World Meteorological Organization's (WMO)			• Three countries received capacity building in the area of Big data for emergency situations as part of the project "Development of ICT Applications against Ebola Disease". Three Member States received the solutions that consist of software and hardware solutions to be used in emergency sistuations.

Outcomes (Ctn'd)	2017 achievements	Target 2020	Outcome indicators	2017 measurement of the outcome indicators
	Multi-hazard Early Warning Conference (MHEWC), which took place during the Global Platform 2017, from 21-22 Mai 2017. • On October 13th, which is the International Day for Disaster Reduction, and emergency telecommunication event was organized showcasing the work of ITU-D in the area of emergency telecommunication deployment and its close cooperation with public and private sector partners.			

RESULTS ASSESSMENT

Expected results	2017 achieved results	Performance Indicators	2017 Performance data
• At least 40% of Member States have early warning systems.	• Implementation of an early warning system (EWS) project in Zambia. • Facilitated emergency disaster response to Member States that requested assistance.	• Number of Member States assisted in developing and implementing early warning system.	• Completed implementation of EWS in Zambia. • Four countries received emergency telecommunication assistance in response to disasters and upon request.
• At least 50% of Member States have developed National Emergency Telecommunication Plans.	• Audit of national emergency telecommunication systems in the Caribbean.	• Number of Cooperation Agreements signed between ITU and other partners on projects that focus on telecommunications/ICTs for disaster preparedness, prediction, detection and mitigation. • Number of Member States assisted in developing their National Emergency telecommunication plans.	• Cooperation agreements/letter of intent signed with Republic of Korea, Ultisat and with CITEL/ COMTELCA/ CTU.
• At least 50% of Member States ratify the Tampere Convention.	• 48 countries have ratified the Tampere Convention and 60 countries are signatories.	• Number of Regional workshops on Tampere Convention. • Number of Member States that ratified the convention.	• Three workshops with sessions on the Tampere Convention and 4 countries received capacity building in the area of emergency telecommunications. • 48 countries have ratified the Tampere convention.

Threat and risk assessment

Perspective	Risk reported	Impact reported	Mitigation measures implemented
1. Finance	Lack of resources to provide appropriate support to Member States on their requirements	High	• Mobilization of additional resources to cope with demand
2. Stakeholders/ Partners	Insufficient support from partners and countries	High	• Closer cooperation with countries and partners
3. Human resources	Insufficient human resources to cope with work demand during multiple disasters at the same time	High	• Capacity building activities performed for Member States

2017 On-going projects by region

The table below provides the list of the current on-going projects for Objective 5 by region

Project No	Title	Region
2ZAM15006	Natural Disaster Early Warning System - Zambia	Africa
7RAF15087	ICT Applications Against Ebola Disease - Phase I	Africa
2ARG17013	E-Waste Pilot Plant	America
2RLA17016	Proyecto piloto para el uso de las TIC para situaciones de emergencia y desastres en la región de las Américas	America
2EGY16002	Smart Groundwater Management	Arab States
9RAS14052	Implementing the Climate Change Adaptation Component of the Satellite Communications, Capacity, and Emergency Communications Solutions Project for the Small Island Developing States of the Pacific	Asia & Pacific
9RAS17058	Emergency Telecommunications in Asia and the Pacific	Asia & Pacific
7RAS14050	Development of Satellite Communications Capacity and Emergency Communications Solutions for the Pacific Islands	Asia & Pacific
2GLO17083	Global e-waste statistics	World or Multi-Regional
7GLO03043	Rural Telecommunications Development in Least Developed Countries	World or Multi-Regional

PART 3 – The Telecommunication Development Bureau

This section presents the Telecommunication Development Bureau as well as the different departments and divisions that are part of it.

Summary

The mission of the BDT includes the organization and support of the outputs related to the five objectives of the Telecommunication Development Sector. These outputs consist of actions and activities that represent a key component when it comes to the financial and planning processes.

ITU-D Bureau

The Telecommunication Development Bureau is responsible for assisting countries in the field of information and communication technologies (ICTs), facilitating the mobilization of technical, human and financial resources needed for their implementation, as well as promoting access to ICTs. The Telecommunication Development Bureau also promotes the extension of the benefits of ICTs to all the world's inhabitants, participates in actions that contribute towards narrowing the digital divide, develops and manages programmes that facilitate information flow geared to the needs of developing countries.

The Telecommunication Development Bureau is organized into four Departments:

- Deputy to the Director and Chief of the Administration and Operations Coordination Department (DDR)
- Infrastructure, Enabling Environment and E-Applications Department (IEE)
- Projects and Knowledge Management Department (PKM)
- Innovation and Partnership Department (IP)

In addition, it includes the Regional Offices.

The chart below illustrates the structure of the BDT.

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                          │ Office of the Director │
                          │        (DIR)          │
                          └───────────┬───────────┘
                                      │
        ┌──────────────────────────┐  │
        │ Deputy to the Director,  │  │
        │   and Chief of the       │  │
        │  Administration and      │  │
        │  Operations and          │  │
        │ Coordination Department  │  │
        │        (DDR)             │  │
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                                      │
   ┌──────────────┬─────────────────┼─────────────────┬──────────────┐
   │              │                 │                 │              │
┌──────────────┐ ┌──────────────┐ ┌──────────────┐ ┌──────────────┐
│Infrastructure,│ │ Projects and │ │Innovation and│ │Regional Offices│
│Enabling       │ │  Knowledge   │ │ Partnership  │ │              │
│Environment    │ │ Management   │ │ Department   │ │    (ROs)     │
│and E-         │ │ Department   │ │              │ │              │
│Applications   │ │              │ │    (IP)      │ │              │
│Department     │ │   (PKM)      │ │              │ │              │
│   (IEE)       │ │              │ │              │ │              │
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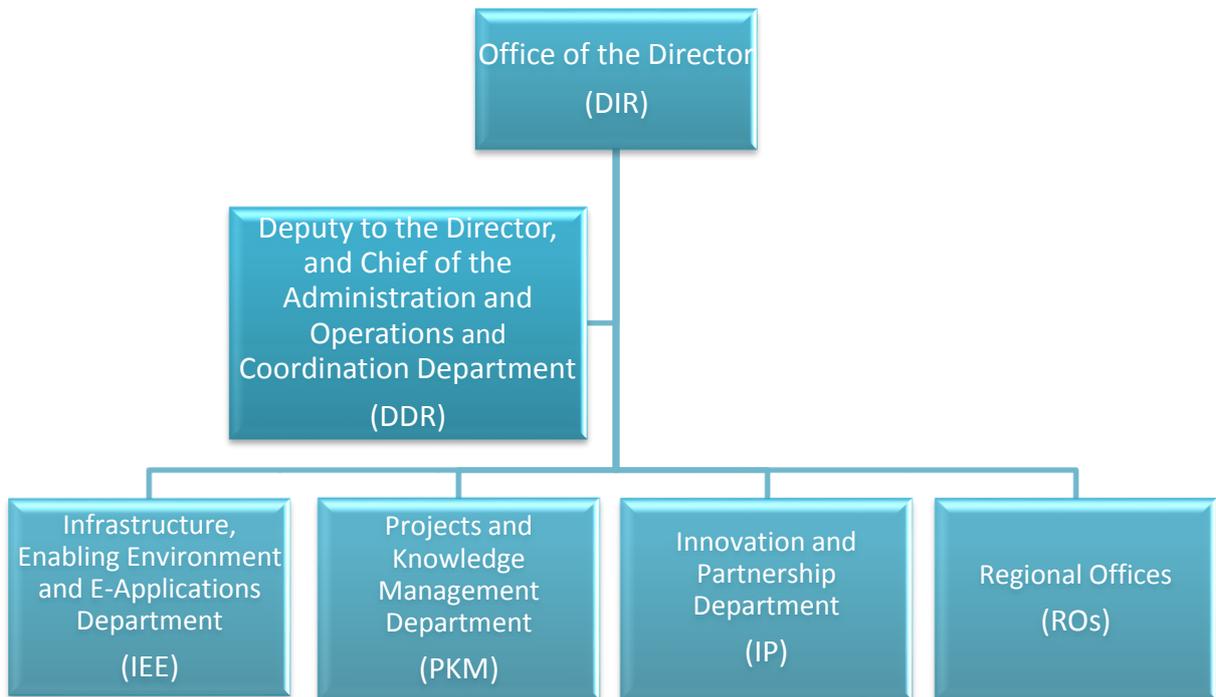
Key activities

The key activities of the Telecommunication Development Bureau are linked to the following:

- Assistance to least developed countries, landlocked developing countries and small island developing states
- Broadband deployment in rural areas
- Capacity building
- Climate change mitigation and adaptation and e-waste management
- Conformance and interoperability capacity building
- Cyber security: building confidence and security in the use of ICTs
- Digital inclusion
- Emergency telecommunications
- Global symposium for regulators

- Indicators and statistics
- M-health applications to combat non-communicable diseases
- Partnership building and resource mobilization
- Policy and regulatory fora
- Project implementation
- Spectrum management system for developing countries
- Study group activities and knowledge sharing
- Transition from analogue to digital broadcasting
- Transition to new generation networks

Deputy to the Director and Chief of the Administration and Operations Coordination Department (DDR)

The Deputy to the Director and Chief of the Administration and Operations Coordination Department (DDR) is responsible for assisting and advising the Director in the direction and management of the Bureau including on all questions related to personnel, finance and operational planning process. The Department is responsible for leading the operational planning, assessment and reporting process within the framework of the Action Plan as adopted by the World Telecommunication Development Conference in coordination with the Heads of the other Departments in the Bureau and Regional Directors. The Department is responsible for management of the Administration Division (ADM), the Support Division (SUP), the IT Support Service (ITS) and the Support to Field Offices

Service (SFO). The Department is also responsible for coordinating conferences and events preparation and for monitoring the implementation of decisions emanating from ITU and BDT governing bodies including Council, Conferences and Assemblies of the other Sectors for matters of relevance to BDT as well as from the Telecommunication Development Advisory Group. The Department is responsible for coordination of the Bureau's cooperation with other Sectors and General Secretariat.

The following table provides the breakdown of human resources (Work/Months) in the Deputy to the Director and Chief of the Administration and Operations Coordination Department (DDR) by grade, for both planned and actual resources for 2017.

Human resources
(Work/months)

Grade	Planned	Actual
D2	12	12
P5	24	24
P4	24	24
P3	36	36
P2	60	60
G6	84	84
G5	24	12
Total	**264**	**252**

Infrastructure, Enabling Environment and E-Applications Department (IEE)

The Infrastructure, Enabling Environment and E-Applications Department (IEE) is responsible for assisting ITU Member States and ITU-D Sector Members with the utilization of appropriate technologies to build or extend their telecommunication infrastructure and adapt to the rapidly changing telecommunication/ICT environment. This includes the provision of guidelines and tools for the development of policy and regulatory frameworks, financing policies and strategies, development of telecommunication networks, the use of reliable and cost-effective ICT applications, cyber security, broadcasting and spectrum management. The Department is also responsible for promoting access to, as well as use and knowledge of, telecommunications and ICTs for groups which have been marginalized in their access to current mainstream information communications technology services, including women and girls, children and youth, indigenous people, persons with disabilities and people living in remote communities. The Department is also responsible for making contribution to and following-up the work of ITU-D Study Groups for issues related to the responsibilities of the Department.

The table below shows the breakdown of the human resources (Work/Months) in the Infrastructure, Enabling Environment and E-Applications Department (IEE) by grade, for both planned and actual resources for 2017.

Human resources
(Work/months)

Grade	Planned	Actual
D1	12	12
P5	60	48
P4	60	96
P3	36	24
P2	24	24
G6	12	12
G5	36	36
Total	**240**	**252**

Projects and Knowledge Management Department (PKM)

The Projects and Knowledge Management Department (PKM) is responsible for assisting ITU Member States and ITU-D Sector Members strengthen the institutional and organizational capability to adapt to the rapidly changing telecommunication/ICT environment through capacity building. The Department also provides administrative and technical support in the formulation of project proposals and implementation of projects, project monitoring and evaluation; produces and disseminates timely statistical and analytical data on the Telecommunication/ICT Sector and the Information Society; and supports the work of ITU-D Study Groups. The Department is also responsible for providing concentrated assistance to least developed countries, small island developing states, and landlocked developed countries. In addition, PKM implements activities and projects in the domain of emergency telecommunications, and climate change. The Department is also responsible for making contribution to and following-up the work of ITU-D Study Groups for issues related to the responsibilities of the Department.

The table below shows the breakdown of the human resources (Work/Months) in the Projects and Knowledge Management Department (PKM) by grade, for both planned and actual resources for 2017.

Human resources

(Work/months)

Grade	Planned	Actual
D1	12	12
P5	48	48
P4	72	84
P3	72	60
P2	12	12
G6	12	12
G5	72	60
Total	**300**	**288**

Innovation and Partnership Department (IP)

The Innovation and Partnership Department (IP) is responsible for the strategic planning and thinking that will properly position the BDT to accomplish the organizational goals and objectives and to achieve the corporate vision; partnership building and resource mobilization, including the management of the ICT-DF and other funds in trust to support the implementation of regional initiatives through bankable projects; and content coordination and strengthening of the synergy between the ITU-D Study Groups, the programmes and the special initiatives.

The table below shows the breakdown of the human resources (Work/Months) in the Innovation and Partnership Department (IP) by grade, for both planned and actual resources for 2017.

Human resources
(Work/months)

Grade	Planned	Actual
D1	12	12
P4	48	60
G6	24	24
G5	12	24
Total	**96**	**120**

Regional and Area Offices

The Regional and Area Offices are responsible for proposing the operational policy and strategy of telecommunication development activities in their respective regions, coordinating with countries of the region to prioritize requirements, proposing inputs for the preparation of the operational plan based on these prioritized regional requirements, as well as coordinating and implementing technical cooperation activities in their respective regions, be they in the framework of projects, regional initiatives, or follow-up of World Telecommunication Development Conferences.

The table below shows the breakdown of the human resources (Work/Months) in the Regional and Area Offices by grade, for both planned and actual resources for 2017.

Human resources
(Work/months)

Grade	Planned	Actual
D1	48	48
P5	150	156
P4	48	48
P3	144	144
P2	24	24
G6	48	48
G5	192	192
G4/G3/G2	48	48
Total	702	708

The tables below show the breakdown by region

- AFR

Human resources
(Work/months)

Grade	Planned	Actual
D1	12	12
P5	48	48
P4	12	12
P3	48	48
G6	12	12
G5	60	60
G4/G2	24	24
Total	**216**	**216**

- AMS

Human resources
(Work/months)

Grade	Planned	Actual
D1	12	12
P5	48	48
P4	12	12
P3	36	36
P2	12	12
G6	12	12
G5	48	48
Total	**180**	**180**

- ARB

Human resources
(Work/months)

Grade	Planned	Actual
D1	12	12
P5	12	12
P4	12	12
P3	12	12
P2	12	12
G6	12	12
G5	24	24
G3	12	12
Total	**108**	**108**

- ASP

Human resources
(Work/months)

Grade	Planned	Actual
D1	12	12
P5	24	24
P4	12	12
P3	24	24
G6	12	12
G5	36	36
G3	12	12
Total	**132**	**132**

- CIS

Human resources
(Work/months)

Grade	Planned	Actual
P5	12	12
P3	12	12
G5	12	12
Total	**36**	**36**

- EUR

Human resources
(Work/months)

Grade	Planned	Actual
P5	6	12
P3	12	12
G5	12	12
Total	**30**	**36**

PART 4 – The resources

Summary

This part of the document presents the summary of planned and actual resources for 2017. These estimates are based on the full implementation of outputs and activity programme of the Telecommunication Development Sector.

Human resources

The following table and charts present the evolution of the planned human resources in terms of work/months for the Telecommunication Development Bureau for 2017.

Comparison between the actual and planned human resources levels

Human resources
(Work/months)

Grade	Planned	Actual
E2	12	12
D2	12	12
D1	84	84
P5	294	276
P4	264	324
P3	288	264
P2	132	132
G7	12	12
G6	192	192
G5	348	348
G4/G3/G2	48	48
Total	**1,686**	**1,704**

Distribution of the 2017 actual staffing of the Telecommunication Development Bureau by objectives and grade

		E2	D2	D1	P5	P4	P3	P2	G7	G6	G5	G4/G3/G2	Total
OBJ. 1	Output 1.1 WTDC	1.80	2.40	14.40	33.96	25.32	15.24	21.60	1.80	27.96	29.40	3.60	**177.48**
	Output 1.2 RPMs	1.80	0.72	8.28	25.56	14.52	15.72	10.20	1.80	16.56	21.96	3.00	**120.12**
	Output 1.3 TDAG	0.96	1.08	5.52	9.84	17.16	7.56	5.88	0.96	15.48	17.04	1.44	**82.92**
	Output 1.4 STG	0.96	1.08	5.04	9.84	20.16	8.76	7.92	0.96	14.28	11.40	0.96	**81.36**
OBJ. 2	Output 2.1 Policy and regulatory frameworks	0.60	0.72	5.52	27.00	37.20	27.60	6.24	0.60	13.20	23.16	3.24	**145.08**
	Output 2.2 Telecommunication/ICT networks	0.60	0.60	5.52	26.76	27.24	25.44	5.76	0.60	9.84	28.44	6.24	**137.04**
	Output 2.3 Innovation and partnership	0.60	0.60	8.28	12.24	32.28	11.64	3.60	0.60	20.40	25.56	2.76	**118.56**
OBJ. 3	Output 3.1 Building conf. and security in ICTs	0.72	0.60	4.68	15.96	20.16	18.48	23.76	0.72	10.56	21.48	3.36	**120.48**
	Output 3.2 ICT applications and services	0.72	0.60	5.64	16.32	23.52	12.60	2.88	0.72	11.28	24.12	5.04	**103.44**
OBJ. 4	Output 4.1 Capacity building	0.60	0.60	4.80	14.40	15.24	14.64	7.44	0.60	11.16	25.92	5.76	**101.16**
	Output 4.2 Telecommunication/ICT statistics	0.48	0.60	1.92	30.96	44.40	43.44	15.84	0.48	7.56	47.04	2.28	**195.00**
	Output 4.3 Digital incl. of people with specific needs	0.48	0.60	4.32	17.28	17.76	10.20	3.84	0.48	9.60	23.28	2.28	**90.12**
	Output 4.4 Concentr. Assist. to LDCs, SIDS and LLDC	0.60	0.60	4.80	15.96	17.04	18.72	5.04	0.60	9.36	17.88	3.24	**93.84**
OBJ. 5	Output 5.1 ICTs and climate-change adapt. and mitig.	0.60	0.60	2.28	9.24	6.12	16.56	6.96	0.60	7.20	12.84	2.16	**65.16**
	Output 5.2 Emergency telecommunications	0.48	0.60	3.00	10.68	5.88	17.40	5.04	0.48	7.56	18.48	2.64	**72.24**
	Total	**12.00**	**12.00**	**84.00**	**276.00**	**324.00**	**264.00**	**132.00**	**12.00**	**192.00**	**348.00**	**48.00**	**1704.00**

Distribution of the actual 2017 staffing level of the Telecommunication Development Bureau by grade (Work/months)
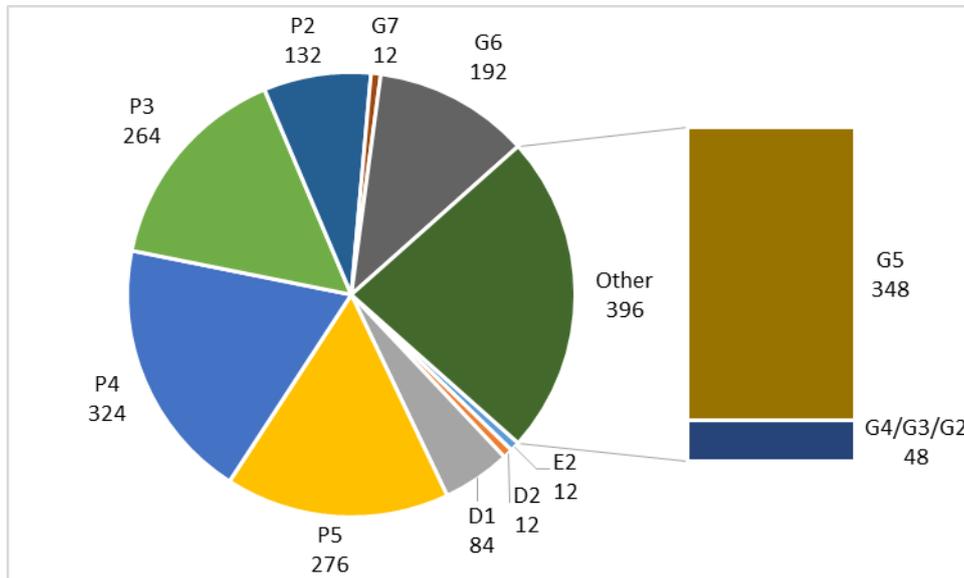
Breakdown of total 2017 actual human resources by department
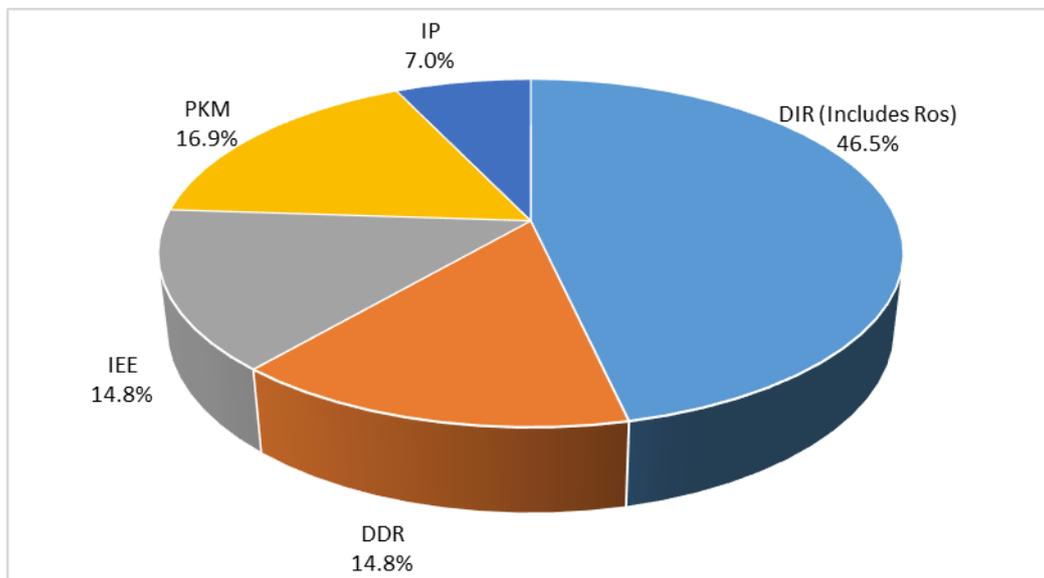
Distribution of the 2017 actual staffing (work/months) of the Telecommunication Development Bureau by Department and grade

	DIR (includes ROs)	DDR	IEE	PKM	IP
Elected Official	12				
D2		12			
D1	48		12	12	12
P5	156	24	48	48	
P4	60	24	96	84	60
P3	144	36	24	60	
P2	36	60	24	12	
G7	12				
G6	60	84	12	12	24
G5	216	12	36	60	24
G4/G3/G2	48				
Total	**792**	**252**	**252**	**288**	**120**

PART 5 – Annex on the implementation of regional initiatives during 2017

In 2017, BDT continued to implement regional initiatives approved under the Dubai Action Plan. These regional initiatives were intended to address specific telecommunication/ICT priority areas through partnerships and resource mobilization to implement small-, medium- and large-scale projects in regions.

The summary of activities undertaken during 2017 under these regional initiatives is provided by regions in Part 1. More details on specific activities are provided in Part 2. Tables 1 and 2 provide quantitate and financial information on the levels of regional activities in 2017[1].

PART 1.   SUMMARY

Africa Region

In 2017, BDT implemented project activities under 13 technical cooperation projects for a total amount of about 3 million CHF in the Africa region, in collaboration with Member States. In addition, activities on 48 actions were implemented for an amount of 597 thousand CHF.

ITU provided support to Africa Telecommunications Union (ATU) in organizing the preparatory meetings to build African common positions to the WTDC and WRC. ITU facilitated the harmonization of policies and regulatory frameworks in the region that includes universalization of broadband, e-Health using mobile devices, and regional and sub-regional IXP to provide cost reduction of traffic. Assistance was provided to countries in the region in various areas, including the model national broadband plans, development of digital economy policies, development of strategies and corporate strategic plan for institutions, etc.

A number of projects are currently ongoing in such areas as institutional reform, telemedicine, wireless broadband, judiciary training, CIRT implementation and enhancement, m-diabetes, and m-cervical cancer. Several regional workshops and forums were organized in 2017 in the region in such areas as conformance and interoperability, IPV6, cybersecurity and CyberDrill, IOT, ICT economics and finance, quality of service and quality of experience, international roaming, and ICT accessibility and digital inclusion. Several national workshops were organized on such subjects as spectrum management, ICT measurements and indicators, CIRT management, ICT skills train of trainers, COP, cybersecurity maturity review and strategy, crisis management plan, judiciary training, and QoS and QoE.

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[1]   All financial figures for 2017 are preliminary awaiting the final closure of accounts. Implementation figures refer to funds committed for the implementation of actions/projects.

Americas Region

In 2017, BDT implemented project activities under 11 technical cooperation projects for a total amount of about 3.8 million CHF in the Americas region, in collaboration with Member States. In addition, activities on 32 actions were implemented for an amount of 649 thousand CHF.

Direct assistance and support were provided to different countries in the region in areas of policy and regulatory framework for an e-waste management, development of national ICT plans, preparation of guidelines for transition from analogue to digital broadcasting, infrastructure deployment, web accessibility training, etc. An online training on innovative communication tools for the inclusion and strengthening of indigenous people was delivered to over 150 indigenous people from 16 countries.

Several regional workshops and forums on conformance and interoperability, internet governance, cyber bullying, ICT accessibility and digital inclusion, cybersecurity and CyberDrill, emergency telecommunications and IOT were organized/delivered in 2017 in the Americas region. Over 15 capacity building activities were delivered through ITU Academy on relevant issues, such as radioelectric spectrum, the role of ICTs in smart and sustainable cities, optical and NGN networks, regulation of spectrum and telecommunications services, etc. A pilot project on the establishment of an Alternate Regional Emergency Telecommunications Network in the Americas Region was prepared as a result of the joint effort of ITU, CITEL and COMTELCA. A conformity and interoperability assessment study was conducted with the main objective of creating proposals on ways forward to improve the C&I status in the region.

Arab Region

In 2017, BDT implemented project activities under 8 technical cooperation projects for a total amount of 860 thousand CHF in the Arab region, in collaboration with Member States. In addition, activities on 32 actions were implemented for an amount of 369 thousand CHF.

Through the ITU Arab CoEs Network, 12 capacity building courses were implemented in different aspects of ICTs applications and services, new technologies and Broadband, and more than 300 participants were trained. A cooperation agreement was signed with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) represented by the Employment Promotion Project (EPP) for the organization of "Girls in ICT Day Events" until 2019. Assistance was provided to the Arab Incubators and Technoparks Network (ARTECNET), and a study was conducted on broadband networks and IXPs development.

Capacity building activities on Smart Learning, IoT, Smart cities development, ICT and Climate Change, and ICTs for Disaster Management were organized in the Arab Region. Direct assistance was provided to Palestine, Somalia and Sudan on mobile number portability, national numbering and appraisal systems, respectively. Furthermore, capacity building assistance was provided to countries in the area of spectrum management, IPv6 and frequency coordination. Efforts were continued in relation to cyber security through annual regional summit and annual regional Cyber Drills as well as child online protection and cybersecurity activities. ICT Accessibility was promoted regionally through the organization of Regional ICT Accessibility Week.

Basic Structure for National Spectrum Management System in Comoros was conducted in 2017. In addition, several workshops were organized on spectrum management and frequency allocation in collaboration with BR.

Asia and the Pacific Region

In 2017, BDT implemented project activities under 14 technical cooperation projects for a total amount of about 1.4 million CHF in the Asia and the Pacific region, in collaboration with Member States. In addition, activities on 40 actions were implemented for an amount of 371 thousand CHF.

The key emphasis was on capacity building and specialized assistances in the areas of RF spectrum management and monitoring, developing medium to long-term spectrum management master plans, policy and regulatory frameworks, cybersecurity, implementation of CIRT, National Cybersecurity Strategies and child online protection, broadband, conformance, interoperability and type approvals, broadcasting, ICT applications, telecom sector roadmap for Pacific submarine cable access, converged licensing, quality of service, ICT Indicators and Statistics, Internet of Things, implementation of IPv6, ICTs for promoting innovation and entrepreneurship, ICTs for the empowerment of women, e-governance, smart and sustainable cities, e-agriculture, emergency telecommunications, and other technical and regulatory assistances.

In the area of training, emphasis continued to focus on smart sustainable technologies, e-applications, IPv6 infrastructure security and transition, cybersecurity, CIRT capabilities and child online protection, ICT indicators and statistics, broadband technologies and roadmaps, satellite and emergency communications, submarine cable access, competition analysis in cross-sectoral environment, 5G, conformity and interoperability, Internet of Things, spectrum economics, legal and wireless innovation in spectrum management, RF monitoring and automation tools (SMS4DC), preparing for international conferences, developing e-strategies (agriculture, health, postal service, telecommunication), cost modelling for wholesale, retail and mobile networks and broadcasting, among others.

CIS Region

In 2017, BDT implemented activities on 19 actions for an amount of 231 thousand CHF.

All five WTDC-14 Regional Initiatives were implemented. Major outputs of CIS Regional Initiatives in 2017 were Internet Access and Training Centre for persons with hearing disabilities in Vitebsk, Republic of Belarus (5 working places) and the software that helps to select the most feasible solution for broadband deployment in all cities and settlements in CIS and Georgia (https://broadbandcalculator.online), among others.

Following demand from ITU membership in the CIS region, areas of capacity-building activities and regional discussions in 2017 included innovation, spectrum management and broadcasting, smart sustainable cities, future networks, IoT, digital financial services, policy and regulation and cybersecurity. Throughout the year, 18 regional events were organized, attracting around 1,170 participants in total from more than 30 countries. Technical assistance was provided to address requests from ITU Member-States in the region in areas of training of informatics teachers in rural areas; improvement of remote education facilities for capacity building; research on best practices of regulation; and expert assessment of broadband tariff methodology, among others.

Europe Region

In 2017, BDT implemented project activities under 2 technical cooperation projects for a total amount of 415 thousand CHF in the Europe region, in collaboration with Member States. In addition, activities on 16 actions were implemented for an amount of 223 thousand CHF.

Efforts to strengthen the implementation mechanism for the region were continued, including coordination of actions with diverse relevant organizations in the region, such as CEPT, EU, EC, ECO, ENISA, Regional Cooperation Council, ICPE and the UN, including UN ECE, R-UNDG, UNIDO, UNCTAD, WHO and FAO, as well as some UN country teams. Throughout the year, more than 21 workshops, seminars, expert group meetings on broadcasting, broadband, accessibility, cybersecurity, innovation, ICT for energy and electromagnetic field in the context of 5G roll out, and human capacity building were organized, attracting more than 2,100 participants in total from 35 countries. In addition, human capacity of more than 400 professionals was built through the European Network of Centers of Excellence (CoEs) that offered 25 training opportunities.

Direct assistance was provided to Albania, Bosnia and Herzegovina, Montenegro, Cyprus, Poland, FYR Macedonia, and Serbia in the fields of innovation, broadcasting, broadband, cybersecurity, and ICT applications, and elaboration of digital innovations profiles. 10 publications and reports have been elaborated. A new approach for effective delivery of executive trainings on accessibility at national level with the collaboration of UN resident teams has been piloted in two countries and will be further replicated across Europe region. Collaboration with European Commission and the Regional Cooperation Council has been strengthened to advance the digital integration of Western Balkans.

Table 1. Implementation of BDT operational plan by regions in 2017

(amounts in thousands of Swiss francs)

Region	Objective 2		Objective 3		Objective 4		Objective 5		TOTAL	
	Number of actions	Impl. Level CHF (000)	Number of actions	Impl. Level CHF (000)	Number of actions	Impl. Level CHF (000)	Number of actions	Impl. Level CHF (000)	Number of actions	Impl. Level CHF (000)
Africa	25	331	10	124	13	142			48	597
Americas	14	238	4	104	10	194	4	113	32	649
Arab States	12	188	8	56	8	56	4	69	32	369
Asia-Pacific	23	207	7	81	7	63	3	20	40	371
CIS	6	75	5	64	8	92			19	231
Europe	10	118	3	46	3	59			16	223
Total	**90**	**1,157**	**37**	**475**	**49**	**606**	**11**	**202**	**187**	**2,440**

Table 2. Implementation of projects by regions in 2017

(amounts in thousands of US Dollars)

Region	FIT		ICT-DF		Operational Plan		UNDP		TOTAL	
	Number of projects	Impl. Level US$ (000)	Number of projects	Impl. Level US$ (000)	Number of projects	Impl. Level US$ (000)	Number of projects	Impl. Level US$ (000)	Number of projects	Impl. Level US$ (000)
Africa	3	184	6	2,517	4	289			13	2,990
Americas	8	3,766			3	28			11	3,794
Arab States	2	810	3	7	2	17	1	26	8	860
Asia-Pacific	13	1,288	1	81					14	1,369
CIS									0	0
Europe	2	415							2	415
Total	**28**	**6,463**	**10**	**2,605**	**9**	**334**	**1**	**26**	**48**	**9,428**

PART 2.   DETAILS OF ACTIVITIES UNDERTAKEN IN 2017 UNDER REGIONAL INITIATIVES

AFRICA REGION

AFR RI 1: Strengthening human and institutional capacity building

The Regional Initiative on Strengthening Human and Institutional Capacity Building was extensively implemented within the framework of the ITU CoE network and ITU Academy. In 2017, about 200 professionals were trained in various subjects by the networks.

The Smart Africa Scholarship Fund was established with seed funding from ITU and initial contributions from Rwanda and South Sudan in 2015. In 2016, the fund awarded seven scholarships to students, enabling them to pursue ICT/Engineering Masters programmes at Carnegie Mellon University (CMU) Africa. The students graduated successfully strengthening Africa's ICT-related human capacity. In 2017, additional scholarships were awarded to 10 students at CMU Africa and 24 students at ESMT in Dakar (Senegal).

The Annual Regional Annual Regional Human Capacity Building Workshop for Africa, organised by the ITU in Plaine Magnien, Mauritius, on 28-30 June 2017 under the theme ""Developing the ICT ecosystem to harness Internet-of-Things", attracted 161 participants from 21 countries and 6 international/regional organizations. 61 participants were foreigners and the rest were from Mauritius. The participants included professionals from governments, regulatory authorities, ICT industry from public and private sector as well as academia.

The newly established ICT Commission in Tanzania has developed its Corporate Strategic Plan with the assistance from the ITU.

AFR RI 2: Strengthening and harmonizing policy and regulatory frameworks for the integration of African telecommunication/ICT markets

Least developed country (LDC) capacities were increased in the area of telecommunication/ICT standardization and statistics through national workshops held in Gabon and Madagascar, which provided a deeper understanding of ICT indicators and data collection to the 25 participants in each workshop.

Workshops were conducted in the Economic Community of Central African States on harmonizing national ICT policies and regulatory frameworks. This resulted in the drafting of a set of model laws that are awaiting transposition into the national legislation of requesting countries.

ITU assistance to Rwanda and Burundi laid the foundation for new ICT bills, a secondary legislation and the creation of new specialized regulatory agencies (for frequencies and ICT). Similar assistance has also been provided to Madagascar, Equatorial Guinea and Togo.

ITU assistance to Uganda helped them to progress with the development of its Digital Uganda Vision, which will integrate and harmonize all policies related to ICTs from various sectors in the country.

AFR RI 3: Development of broadband access and adoption of broadband

Wireless broadband infrastructure projects under the ITU/Craig and Susan McCaw Broadband Wireless Network Project for Africa are being implemented in six countries (Burkina Faso, Burundi, Lesotho, Mali, Rwanda and Swaziland) to develop wireless broadband infrastructure and applications and enhance capacity. The projects in Lesotho, Mali, and Swaziland are ongoing, while the projects in Burkina Faso , Burundi and Rwanda have already succeeded in bringing broadband access to hospitals and schools. The same project was also launched in Madagascar with local funding.

Under the ITU/MSIP (Ministry of Science, ICT and Future Planning, Republic of Korea) wireless broadband access master plan project, the groundwork has been completed for the adoption and use of broadband in the Republic of the Congo and Malawi.

A memorandum of understanding between China, ITU and East African Community (EAC) countries on joint partnership and cooperation on the acceleration of development of infrastructure for ICT in East Africa has

provided a strong basis for future implementation of ICT projects. In 2017, a feasibility study was commissioned in regard to implementation of the Joint Partnership and Cooperation on the Acceleration of Development of Infrastructure for ICT in East Africa project that looked at three components: 1) Enhanced broadband and connectivity infrastructure in the EAC, 2) Regional e-transactions platform for e-government and e-commerce, and 3) Centre of excellence in ICT research and innovation. Country visits have now been conducted by ITU and MIIT China experts and respective profiles established in 2017. Project formulation for EAC is underway.

The continuous effort being put into development of the ITU interactive terrestrial transmission map for Africa will result in increased business potential and improved infrastructure planning (sharing of passive telecommunication infrastructure and power supply) in the region.

ITU prepared and shared a case study of the One Network Area roaming framework for the East Africa Northern Corridor countries, which was adopted as a benchmark for roaming in Africa. Mobile Roaming charges have been removed in East Africa and several countries in West Africa, leading to the One Africa Network endorsed by Smart Africa Heads of State.

Burundi was assisted in the development of a broadband policy, strategy and regulatory framework that will result in an improved regulatory environment to help meet the growing demand for broadband connectivity.

A broadband universal access study was conducted for Lesotho that provided strategic guidance for implementation of the universal broadband strategy and overall development of the ICT sector in Lesotho.

Training on C&I was delivered to countries in 2017, as in previous years.

Namibia was assisted in the revision of its National Broadband Policy and associated Strategic Implementation Plan for achieving a digital economy, which will be compliant with the new guidelines, adding any new content if necessary.

In addition, assistance was given for:

- the development of ITU Interactive Terrestrial Transmission Maps for the Economic Community of West African States (ECOWAS) subregion;

- RASCOM, in its technical auditing;

- ECOWAS, in the feasibility study of its SIGTEL (a repository for telecom/ICT projects and activities in West Africa);

- a feasibility study conducted for EACO countries (East Africa) for the setting up of a subregional Internet exchange point (IXP);

- setting up of an Internet protocol version 6 (IPv6) testbed in Côte d'Ivoire and Uganda, to be used as subregional test beds for IPv4 to IPv6 migration in Western and Eastern Africa, respectively;

- the implementation of phase one of the ITU/McCaw Foundation broadband wireless network in Burkina Faso, and a review of the scope and planning of the same project for Mali;

- setting up of an IPv6 testbed in Zimbabwe implemented to be used as a subregional testbed for IPv4 to IPv6 migration in Southern Africa;

- setting up of an IPv6 testbed in Cameroon, to be used as a subregional testbed for IPv4 to IPv6 migration in Central Africa.

AFR RI 4: Spectrum management and transition to digital broadcasting

In 2017, a regional workshop on the funding of DTT was organized in Dakar. Strategies and solutions were deployed by Regional Development banks to provide enough funding for requesting countries in their migration to DTT. In addition, some countries, such as Equatorial Guinea, Gabon and Congo, were assisted in their national spectrum management and frequency coordination.

AFR RI 5: Building confidence and security in the use of telecommunications/ICT

In 2017, CIRT readiness assessment workshops were conducted for Mali and Namibia in March and April, respectively. ITU, in collaboration with CTO, assisted the kingdom of Swaziland to perform a cybersecurity maturity review and a national cybersecurity strategy in September. In addition, a regional capacity building workshop was conducted in Benin in December.

AMERICAS REGION

AMS RI 1: Emergency telecommunications

The ongoing Bahamas Smart Island initiative, is currently a blueprint for other Caribbean countries. The initiative serves to improve urban infrastructures, systems and governance and help save lives by better preparing to meet the challenges of climate change, including disruption in the wake of a disaster. It will also contribute to social equality by ensuring universal access to public services, healthcare, security and intelligent traffic systems.

In September and October 2017, ITU deployed emergency telecommunication equipment to the Caribbean islands of Haiti, Dominica and Antigua and Barbuda as a response effort after the massive devastation caused by some of the strongest storms to hit the region: Category 5 Hurricanes Irma, Jose and Maria. A combined total deployment in the Caribbean Region of 70 satellite phones, 13 BGANs, 33 Solar Chargers & accessories and two (2) VSAT, peripherals & accessories were deployed to support humanitarian relief and initial recovery efforts and for further coordination of recovery and reconstruction activities in different locations on the islands for up to three (3) months in the first instance. The two (2) VSATs will remain in Dominica as part of their infrastructure with connectivity cost undertaken by the country.

In 2017, the II Workshop on Technologies for mitigating the effects of earthquakes and tsunamis was organized in Pisco, Peru on 21 and 22 June 2017.

In October 2017, ITU, CITEL, COMTELCA and CTU signed a letter of intention during WTDC-2017 in Argentina, committing to develop a cooperation mechanism for the implementation of projects on the use of ICT for emergency and disaster situations in the Americas region. As its direct result, ITU designed and signed the project "Proyecto piloto para el uso de las TIC para situaciones de emergencia y desastres en la región de las Américas" (Pilot Project for the use of ICTs in emergency and disasters in the Americas region), which will benefit Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama and Dominican Republic and it will be implemented in 2018. The beneficiary countries will receive a kit that will enable them to integrate a regional emergency telecommunication network based on Winlink.

AMS RI 2: Spectrum management and transition to digital broadcasting

In 2017, ITU launched a border-area frequency coordination process for Caribbean basin and Central American countries (a total of 27 countries and territories). The first meeting was held in Nicaragua in March, and the second took place in Guatemala at the end of August 2017. Meanwhile, most of the countries have contributed the spectrum assignment data needed in order to run the frequency coordination simulation iterations. The whole process is expected to be concluded in 2018.

In 2017, ITU delivered online training courses in the fields of spectrum management and digital broadcasting for the benefit of Latin American countries. In particular, online training course in spectrum management in cooperation with the Inter-American Telecommunication Commission (CITEL) were delivered through the ITU Academy platform.

ITU supported the Ministry of Information and Communications Technologies of Colombia (MinTIC) in the development of studies, analyzes and proposals related to (i) the diagnosis and updating of National Technical Plans of Radio Broadcasting (PTNRS); (ii) the definition of the technological strategy for the new AM and FM radio broadcasting in Colombia; (iii) new technologies for radio broadcasting; (iv) proposing a good practices manual for stations and "transmóvil" assembly; (v) the technical specification of a WEB tool

for management and control of the PTNRS and the radio broadcasting concessionaires; and (vi) training and socialization activities. This assistance is provided in the framework of a technical Cooperation Project 9COL16036.

ITU supported the Ministry of Information and Communications Technologies of Colombia (MinTIC) in the diagnosis and audit of the process of Spectrum Allocation by Objective Selection in order to make recommendations to strengthen management, analysis, administration, planning and allocation of the radio electric spectrum within the framework of the Integrated Management Model (MIG) of the Ministry. This assistance is provided in the framework of a technical Cooperation Project 9COL17037.

In 2017, the ITU-Korean Project on the Development of Master Plans for Spectrum Management completed the Master Plan for St. Vincent & the Grenadines. This project aimed to assist developing countries in the Americas region, focusing on Caribbean countries, to establish national spectrum management master plans. The activities of the project with respect to each beneficiary country included the assessment of spectrum management scheme (i.e. spectrum policy, spectrum use, authorization, spectrum sharing, spectrum pricing, spectrum monitoring and compliance), and the provision of advice in connection with each beneficiary country's development of relevant policies, legislations and regulations, based on requests and interests of the countries. This project will also build human capacity and provide guidance in preparing the implementation of the master plans where requested by beneficiary country and agreed to by ITU.

In the framework of the Latin American Telecommunications Congress, co-organized with GSMA LA, CAF, ASIET and the Colombian Administration, ITU arranged a session dedicated to discuss public policies in the field of development-oriented radio-communications. The attendance to the Congress was estimated at more than 500 people, of which at least 300 attended the ITU Panel. In a poll distributed to 150 attendees, the panel organized by the ITU was ranked second under question "Which was the most relevant panel?".

AMS RI 3: Development of broadband access and adoption of broadband

ITU delivered a study on broadband focusing on technology, market and regulation aspects, and analysing the status of broadband development in the Andean subregion (Bolivia, Colombia, Ecuador, Peru and Venezuela).

Training on C&I was delivered to countries in 2017, as in previous years.

In July 2017, assessments of C&I regimes and MRAs have been specifically conducted for South American countries (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay and Venezuela). ITU presented assessment reports to countries during a workshop.

In 2017, ITU continued to support the development of MRAs for COMTELCA country members (Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and Panama).

Collaboration between an ITU Academia member, CPqD, with ITU and Caribbean Stakeholders in regard to homologation and testing procedures: A high-level Caribbean mission visited the laboratories of the CPqD in Campinas, Brazil, on 13-17 November, 2017 in order to gain on-sight experience and to validate testing of devices. ITU and Caribbean Stakeholders are presently assessing and testing the best procedures and processes for shipping equipment to Testing Centres, like CPqD, for testing.

In 2017, ITU assisted Trinidad and Tobago in the Development of a National ICT Plan. This took the form of a technical advice to the government to ensure organizational, functional and governance structures that are consistent with the Government's national agenda and goals for the ICT sector, taking into consideration the country's specific requirements, circumstances and limitations in the review of the draft national ICT plan and recommended alternatives or changes, where warranted.

In 2017, a case study on the massification of ICTs and the digital ecosystem in Panama was published and another study was prepared for Nicaragua. The objective was to analyze the use of ICTs from a regulatory and institutional structure perspective, as well as to look at the status of development and implementation

of telecommunication policies and broadband plans in each country. These case studies resulted in strategic recommendations for bringing about the more effective use and application of ICTs in the countries.

ITU supported South American countries in mapping long-distance terrestrial optical cable systems, a tool that helps administrations and regulators in their work of building and reviewing policies.

AMS RI 4: Reduction of telecommunication service prices and Internet access costs

ITU supported enhanced dialogue to promote a broadband connection between Paraguay and Bolivia (ENTEL Bolivia and the Paraguay Telecommunication Company (COPACO)), the only two landlocked countries in the Americas region.

ITU Study to determine a model for the National IXP for Guatemala involved ISPs, Academia, Government, Content Providers, Civil Society, Mobile Providers and others during several months through online and in situ meetings. Three models were presented, of which one was selected. ITU developed the selected Academic/Private Model and ISOC donated the equipment. ITU participated as secretariat to coordinate the election of the interim executive committee which took the responsibility of the physical implementation of the IXP.

AMS RI 5: Capacity building to engage in global ICT policy, with special focus on improving cybersecurity and developing countries' participation in the existing Internet governance institutions

Americas Cybersecurity Regional Symposium and V Regional Forum on Cybersecurity and Cyberdrill Applied Learning for Emergency Response Team for the America Region were held in Montevideo on 26-29 September 2017. The Symposium of Cybersecurity attracted 84 attendees from Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Jamaica, Mexico, Panama, Paraguay, Peru, and Uruguay.

In 2017, with the aim of strengthening capacities of the ITU membership in the field of international Internet Governance, ITU in partnership with Diplo Foundation and ANATEL organized the ITU Regional Workshop on "Strengthening capacities in international Internet governance".

ITU collaborated with Suriname in hosting the Caribbean Cybersecurity & Cyber Drill in July 2017. The Caribbean Cybersecurity & Cyber Drill provided the capacity building for cybersecurity representatives from Surinam and from several countries of the Caribbean Region and training on the establishment of a National CIRT. The event attractedh 99 attendees representing such countries as the Dominican Republic, Grenada, Guyana, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago , Montserrat (UK), Turks and Caicos Islands (UK), and USA.

To improve capacity in ICT mobile applications, subregional assessments were delivered to the Americas region countries on the potential of mobile technologies and on the evolution of policies for and challenges arising from m-government as well as tools for addressing those challenges, together with recommendations on how to promote the rapid implementation of m-government.

Technical assistance was provided to Trinidad and Tobago to develop its national cybersecurity data protection and classification policy, as well as two workshops on data classification and retention.

In cooperation with ITU, countries in the Americas region participated in the seventh and eighth editions of the South School on Internet Governance, which is a capacity-building event aimed at training new leaders in the most important aspects of Internet governance, from a global perspective and with special focus on Latin America and the Caribbean.

ARAB REGION

ARB RI 1: Development of broadband access and adoption of broadband

Assistance was provided to Iraq, Libya, Palestine, Sudan and Yemen to establish their national broadband master plans for broadband infrastructure and adoption of broadband services.

The first draft of guidelines on cloud computing for education was issued and discussed during an experts meeting organized in collaboration with the Arab League Educational, Cultural and Scientific Organization (ALECSO). These guidelines will support policy-makers in Arab countries in their selection of an appropriate and cost-effective cloud platform model. In addition, the toolkit on "National Strategic Implementation plan for using Cloud Computing in Education in Arab Countries" was developed in partnership with the ALECSO. The toolkit is available for adoption at national levels.

An assessment study was also drafted for Palestine on establishment of a satellite earth station.

ITU expertise was provided to Djibouti to expand the Djibouti Telecom broadband network through WiMAX broadband wireless networks. In addition, an ITU feasibility study was carried out to assist Djibouti in its consideration of the establishment of a regional IXP.

A project on human capacity building in relation to IPv6 was implemented under the framework cooperation agreement signed between the United Arab Emirates' Telecommunications Regulatory Authority (TRA) and ITU.

Arab States countries were also assisted in identifying policy, regulatory, technical and commercial measures for achieving affordable broadband access and services.

AICTO was assisted in its study on the impact of OTT services on the Arab States telecommunication markets.

Selected countries were assisted in developing national broadband plans, as well as in raising awareness and building capacities on technical, economic and financial aspects of broadband deployment and adoption.

The Arab Regional Office co-organized the third annual Middle East and North Africa Spectrum Management Conference on 24 and 25 January 2017, in partnership with Forum Global and the United Arab Emirates' TRA (over 200 registrations). The event was followed by the ITU Workshop on Cross-Border Frequency Management in Arab States, held in Dubai (United Arab Emirates) on 26 January 2017 and attended by 60 participants. As part of the implementation of the first phase of the project on developing basic structure for national spectrum management systems for developing countries, BDT conducted a scoping mission to Comoros by a two-person team to explain the assistance's challenges and objectives and to collect information from the involved stakeholders for the assessment. As a result, recommendations were developed that would be used to develop a Basic Structure for National Spectrum Management System in Comoros.

The skills of 80 delegates from seven Arab countries in the area of technical, regulatory and policy aspects related to broadband networks in the era of the app economy were enhanced during the ITU Arab Forum on Future Networks, held in Tunis (Tunisia) on 21 and 22 February 2017.

During the ITU/BDT Regional Economic and Financial Forum of Telecommunications/ICTs for Arab States, held in Nouakchott (Mauritania) on 17 and 18 May 2017, the 85 participants from six countries shared knowledge and best practices in relation to the contribution of ICTs to the achievement of SDGs set out in the United Nations 2030 Agenda for Sustainable Development.

Selected countries were assisted in developing cooperation to establish Mutual Recognition Agreements on conformance and interoperability (Support to Maghreb Countries meeting in Tunis, Tunisia, 19-20 December 2017).

ARB RI 2: Building confidence and security in the use of telecommunications/ICTs

Capacity was built and awareness raised through the organization of summits, forums, seminars, workshops and training events covering different areas of cybersecurity to meet the expected results of this regional initiative. Guidelines on COP were also developed. ARO developed in close collaboration with MCIT Egypt a games booklet on "Guidelines for teachers and trainers to teach the children the principles of using the internet safely through games", which was published in Arabic.

In addition, selected countries were assisted in establishing their national CIRTs, and regional cybersecurity drills were conducted annually to test CIRT readiness, improve capabilities and ensure optimal coordination between Arab CIRTs.

In the area of technical and policy frameworks, a regional study entitled Cloud Computing in Arab Countries: Legal and Legislative Aspects, Facts and Horizons was carried out to help define the legal measures that ensure data privacy and secure use of the Internet and its various applications.

Selected countries were assisted in the development of their national cybersecurity strategy and COP strategy. ARO in collaboration with the Information Technology Institute (ITI) in Egypt organized the Train the Trainers workshop for establishing localized challenge-based training curriculum in Cybersecurity for Teens in the Arab region. The objective was to train Arab professionals on the ITI curriculum that was designed based on STEAM inspiring initiative and SAMR methodology to enthuse and engage young students in ICT technology through challenge-based activities and cybersecurity skills.

Sudan was assisted in 2017 with the development of its national COP strategy framework.

In cooperation with ARCC, the fifth edition of the ALERT regional cyberdrill was held in Doha (Qatar) from 5 to 9 March 2017. In addition, in collaboration with the Regional Office of Africa, the FIRST-ITU Regional Symposium for Arab and African Regions was organized on 13-15 November 2017, and Cyber Drill - ALERT (Applied Learning for Emergency Response Teams), fourth edition for Africa Region, was organized in Dar Es Salam on 16-17 November 2017. More than 100 professionals were trained from both Arab and Africa Regions.

Training was provided to improve the technical and management skills of Arab CIRTs in the fields of web vulnerability modules (SQAP) and chief information security officer (CISO) modules.

Mauritania was assisted in April 2017 in the development of its national cybersecurity strategy.

Djibouti was assisted, through the ARCC in May 2017, with building its technical capacity in the areas of web security attacks and vulnerability assessment penetration tests.

ARO organized the ITU Regional Forum on Ensuring Cybersecurity in the Era of Emerging Technologies for the Arab Region in Cairo, Egypt, on 28-29 November 2017. The Forum was organized in collaboration with and at the kind hosting by the Arab Administrative Development Organization (ARADO) and attended by 105 participants from 14 Arab countries. The participants discussed the challenges related to emerging technologies and actions to address them.

ARB RI 3: Use of telecommunications/ICTs for smart and sustainable development and protection of the environment

A model policy and legislation for the management of ICT e-waste was drafted that will help to develop national policies in the Arab States region.

To support countries in the development of their national policies, a model policy and case study reports on ICT e-waste in the Arab States region have been drafted.

A regional study on the regulatory framework of ICTs for the transition to smart and sustainable development in the Arab States resulted in a model regulatory framework that will help to define national frameworks in those States.

To support the elaboration of national telecommunication emergency plans, a model national emergency telecommunication plan for the Arab States was drafted.

ARB RI 4: Smart learning

A series of four capacity-building workshops, organized over two years with the aim of building the capacity of policy-makers and planners in the education and ICT sectors in countries of the Arab States region, as well as that of the region's governments in the field of smart learning, were developed through a cooperation

agreement signed with the United Arab Emirates' TRA. The first workshop, attended by participants from ten countries, was held in Dubai from 26 to 28 February 2017.

ARB RI 5: Ensuring access to telecommunications/ICTs, in particular for persons with disabilities

In an effort to support countries in the Arab States in the development of their own national policies, the ITU model ICT accessibility policy report was translated and published in Arabic for the 22 Member States from the region.

Egypt formulated, with ITU support, its national policy on ICT accessibility, with the aim of creating an enabling environment for persons with disabilities, and encouraged other countries in the Arab region to follow suit by showcasing Egypt's transformed national policy framework in this domain.

ASIA-PACIFIC REGION

ASP RI 1: Special consideration for least developed countries, small island developing states, including Pacific island countries, and landlocked developing countries

The first ITU Asia-Pacific Regional Initiative (ASP RI 1) calls for special consideration for LDCs, small island developing states (SIDS), including Pacific island countries, and LLDCs, in order to meet their priority ICT requirements. ITU carried out the following actions in support of this objective:

Provided assistance to Nepal (Ministry of Information and Communications) in the development/update of National Radio Law and management framework.

In a partnership with the Republic of Korea's MSIP, ITU continued to provide assistance to selected countries in the Asia-Pacific region to establish national spectrum management master plans (see also ASP RI 3).

FAO and ITU assisted Afghanistan, Fiji and Papua New Guinea in developing e-agriculture strategies.

A project on capacity building on countering misappropriation of telephone numbers in Pacific island countries was launched in 2017, supported by Australia's DOCA.

In 2017, assistance was provided to Bhutan on an IPv6 roadmap and IPv6 infrastructure security.

ITU provided assistance to Mongolia in the area of ICT Statistics, Cost modelling, Digital Financial Services and Digital Financial Inclusion as well as Spectrum Management.

ITU, in cooperation with PITA and with support from the DoCA and APNIC, built capacity of Members from Pacific Islands in areas of ICT applications, Internet and IPv6 Infrastructure Security, and submarine cable access. A study was also carried out in the areas of international connectivity as well as telecom sector priorities for the Pacific.

ASP RI 2: Emergency telecommunications

The region has seen improved capacity and awareness on the part of its Member States in addressing emergency telecommunication issues through various activities, including the sharing of best practices on emergency communications. Project to address Emergency Telecommunications including National Emergency Telecommunications Plans was established with the assistance of DoCA, Australia.

ASP RI 3: Harnessing the benefits of new technologies

Collaborated with GSMA in providing resources for a Workshop on Spectrum Management in Dhaka, Bangladesh, January 2017

FAO and ITU assisted Afghanistan, Fiji, Philippines and Papua New Guinea in developing e-agriculture strategies and supported Bhutan, Fiji and Sri Lanka towards solutions implementation.

Organized the ITU Regional Workshop on Managing Spectrum in the age of Wireless Communication enhancing capacity of 83 participants in May, 2017, Bangkok, Thailand.

Provided assistance to Sri Lanka on development of technical RFP (for procurement of nationwide spectrum monitoring system) and Timor-Leste (for RF monitoring system for capital Dili and its international airport).

The ITU organized the 3rd Asia-Pacific Regional Forum on Smart Cities and e-Government, and The Annual Internet of Things Asia Pacific Summit built awareness of around 150 participants in the areas of Smart Cities and IOTs.

ITU expertise to improve frameworks and capability in the areas of conformity, interoperability and type approval was provided to several countries in the region through the following actions:

During 2017, members were assisted in the development of applications and cloud computing.

Governments, regulators and industry, through various training events, received training or capacity building in the following areas in 2017:

- Spectrum Management (online, with 143 participants, February 2017).

- Internet and IPv6 infrastructure security for telecommunication networks (35 participants from 11 countries) in May 2017 in Thailand.

- Conformity and interoperability for 4G LTE (online, 36 participants from 13 countries) in April/May 2017.

- IoT: technology, standards and planning (with 71 participants from 5 countries) in July 2017, Tehran, Islamic Republic of Iran.

- Building IoT solutions for e-applications (62 participants), November 2017

Training and expert cybersecurity and COP events improved skills and enhanced national and regional awareness.

- Online training through the ITU CoEs and China Academy of Information and Communication Technology deepened the understanding of C&I in telecommunication networks, mobile terminals and electromagnetic compatibility for 62 participants from 14 countries, in November 2017, Shanghai, China.

- Training in partnership with the Asian-Pacific Postal Union developed an understanding of postal e-strategies among participants (Thailand, June 2017).

- ITU Asia-Pacific CoE Training Program on Spectrum Engineering and Cross border RF coordination (Xian-China, Sep 2017) for 44 participants from 15 ITU member states.

- Under the Girls in ICT Day programme, the ITU-MDES (Thailand) built capacity of more than 200 girls in the area of digital skills in partnership with FAO and CISCO.

ASP RI 4: Development of broadband access and adoption of broadband

Understanding of broadband infrastructure was deepened through improvements made to the online interactive transmission map for the Asia-Pacific region, in collaboration with the United Nation Economic and Social Commission for Asia and the Pacific (UNESCAP).

Awareness of the need for improved access to broadband infrastructure, applications and services was enhanced.

Governments, regulators and industry, through various training events, received training and built capacity in the following areas in 2017:

- Deployment of Broadband through Next Generation Networks (12 participants, 4 countries) in November 2017, India

- OTN and PTN for broadband and high-speed Services (Online, 10 participants, 4 countries)

- Broadband Mobile and Internet of Things Network Planning (75 participants, 10 countries), September 2017, Thailand

ASP RI 5: Policy and regulation

National telecommunication and ICT policy, regulatory and legislative frameworks have been strengthened.

Countries also improved their regulatory frameworks through direct assistance

Enhanced and exchanged information on regulatory matters, through top-level regulatory dialogue.

Improved policy and regulatory skills gained by participants from governments, regulators, industry and academia.

- Collaborative Cross-sectoral Regulatory Mechanisms and Competition Analysis in Digital Economy (36 participants from 13 countries) in Thailand

- Workshop on submarine cable access costing and pricing for the Pacific (90 participants), Fiji,

- International Training Program (94 participants from 20 countries), India

- Infocomm Media Executive Programme: Sharing the Singapore Experience (IMEP) (16 participants), Singapore

Improved collaboration with APT by partnering at sub-regional regulatory and policy forums

National frameworks on policy and regulation were strengthened through:

- Direct country assistance in such areas as the Cost Models and Setting Interconnection Charges (Bangladesh, Mongolia); Regulatory framework for OTT services (Lao P.D.R.); consumer protection framework (Bhutan); and Competition and Tariff Regulation (Mongolia, Vietnam).

- Improved cross-sectoral collaboration frameworks: e-agriculture (Afghanistan, Fiji, Papua New Guinea and Philippines) and DFS/DFI (Mongolia).

CIS REGION

CIS RI 1: Creating a child online protection centre for the CIS region

CIS RI 1 was implemented in partnership with the A.S. Popov Odessa National Academy of Telecommunications (ONAT), an ITU-D Sector Member, and with the support of the Administration of Ukraine. Major outputs are as follows:

- Confidence and security in the use of ICTs was improved through the development of a multimedia distance-learning course on the safe use of Internet resources, which was organized into three modules: basic (for pre-schoolers and primary school pupils), intermediate (for five to nine year olds) and advanced (for senior school pupils, informatics teachers and parents). The course is available, in Russian, at https://onlinesafety.info and on DVD.

- To further contribute to online safety, ITU and ONAT developed a database to store data on technical solutions for COP and software for choosing optimal technical solutions. More than 70 existing technical solutions for COP were tested by experts and included in the database. The software and database are available in Russian at https://contentfiltering.info.

- Finally, to facilitate the identification and management of unsafe web resources, an automated system for the distribution of black (unsafe) and white (reliable) lists of Internet resources was developed. It includes modules for administrators, experts and users and can be used by educational institutions, telecommunication operators and other interested stakeholders. The system is populated with Internet resources and templates that are specific to the CIS countries. The system is available, in Russian, at http://bwld.online.

CIS RI 2: Ensuring access to telecommunication/ICT services for persons with disabilities

CIS RI 2 was implemented in partnership with:

- the Belarusian State Academy of Communications, with the support of the Administration of Belarus

- the Institute of Electronics and Telecommunications under Kyrgyz State Technical University named after Iskhak Razzakov (IET-KSTU), an ITU-D Sector Member, with the support of the Administration of Kyrgyzstan

- the Ministry of Information Technology and Communications of Moldova

- the Government of the Republic of Sakha, with the support of the Administration of the Russian Federation

- the UNESCO Institute for Information Technologies in Education (IITE UNESCO), Moscow (Russian Federation).

Major outputs are as follows:

- Established Information and Training Centre for Persons with Disabilities in the Kyrgyz Republic, opened on 22 October 2015, provides six workstations for motor-impaired users and six for visually-impaired users.

- Internet Access Centre for Visually Impaired People providing 3 specially equipped working places was created in the suburb of Chisinau (Republic of Moldova).

- Internet Access and Training Centre for users with motor and speech disabilities was established in August 2016 in the Republic of Sakha (Russian Federation). The centre has two workstations for blind users, three for visually-impaired users and five for users with musculoskeletal disorders and speech impairments.

- Internet Access and Training Centre for persons with hearing disabilities was established in Minsk (Belarus) in September 2016. It has five workstations.

- Similar Internet Access and Training Centre was established in Vitebsk, Belarus in 2017.

CIS RI 3: Introduction of training technologies and methods using telecommunications/ICTs for human capacity building

CIS RI 3 was implemented in partnership with:

- IET-KSTU, an ITU-D Sector Member, with the support of the Administration of Kyrgyzstan.

- ONAT, an ITU-D Sector Member, with the support of the Administration of Ukraine.

Major outputs are as follows:

- Software (an automated system) for the diagnosis of human susceptibility to one or more channels of information perception was developed and tested as a pilot in Ukraine. The software allows users to determine their predominant perception channel and provides valuable recommendations for improving the quality of their educational process through the use of ICTs. The main purpose of the system is to identify the learning process and ways in which pupils achieve good results, as well as to define the optimal forms and methods of supplying materials for training through the application of telecommunications/ICTs.

- Methodological requirements for e-learning resources were elaborated and gaps in the national legislation of the Kyrgyz Republic were highlighted. Recommendations for the creation of an e-learning resource were drafted and published on the IET website for sharing with other countries in the CIS region: www.iet.kg .

CIS RI 4: Development of broadband access and adoption of broadband

CIS RI 1 was implemented in partnership with the A.S. Popov Odessa National Academy of Telecommunications (ONAT), an ITU-D Sector Member, and with the support of the Administration of Ukraine. Implementation was completed in 2017, major outputs are as follows:

- Developed Recommendations on selecting appropriate technology of broadband deployment in rural and remote areas of CIS and Georgia.

- Software that helps to select the most feasible solution for broadband deployment in all cities and settlements in CIS and Georgia (https://broadbandcalculator.online).

CIS RI 5: Building confidence and security in the use of telecommunications/ICTs

CIS RI 5 was implemented in partnership with Moscow Technical University of Communications and Informatics, with the support of the Administration of the Russian Federation.

Major outputs are as follows:

- The current situation in the CIS where the building of confidence and security in the use of ICTs is concerned was analysed.

- Recommendations containing general indications are being developed on how to evaluate the level of confidence and security in the use of ICTs.

- Training materials were developed for "Forpost" lab-based intrusion detection/prevention systems, including profession-oriented modules, training aids and test materials for information security engineers.

EUROPE REGION

EUR RI 1: Spectrum management and transition to digital broadcasting

EUR RI 1 was implemented in partnership with several stakeholders, including:

- Electronic and Postal Communications Authority (AKEP), Albania

- National Media and Infocommunications Authority of Hungary

- Ministry of Economic Development, Italy

- Communications Regulatory Authority, Italy

- Foundation Ugo Bordoni, Italy

- Netherlands Radiocommunication Agency

- Agency for Electronic Communications and Postal Services, Montenegro

- Ministry of Digital Affairs, Republic of Poland

- Department for Electronic Communications in the Ministry of Trade, Tourism and Telecommunications, Serbia

- Office Fédéral de la Communication (OFCOM), Switzerland

- European Broadcasting Union

- INMARSAT, Nokia, LS Telcom AG, INTEL, Ericsson, Huawei, TIM Group Italy, Thales

Implementation of this initiative has resulted in strengthened regional cooperation. Human capacities in the fields of spectrum management and digital broadcasting were built for more than 70 professionals from over 17 countries. Annual meetings on spectrum management and broadcasting were supplemented by training events.

A regional workshop for Europe and CIS on spectrum management and broadcasting (Italy 2017) identified issues and implementation actions that will maximize the economic and social benefits of the digital dividend. It also considered the future challenges to be addressed in broadcasting and in spectrum management to ensure that Europe and CIS regions are equipped with relevant measures and effective tools. Work pertaining to ITU-D as well as ITU-R Study Groups, TDAG and WRC were also presented and discussed. ITU was requested to further consider the topic of acceptable electromagnetic fields strength to assist administrations facing with this challenge.

In this context, an expert meeting on electromagnetic fields was held in November 2017 in Rome with the participation of over 30 experts from 10 countries. Country case studies were shared and commonalities in problems were found and approaches/solutions to address similar issues were exchanged. Outcome report of this meeting has been injected in relevant ITU-T, ITU-R and ITU-D study groups. In addition, results of the stocktaking exercise on the national approaches for EMF were also developed.

Twinning between Hungary and Albania in field of the spectrum strategy development was facilitated. In follow up to the Resolution 33, a review of the requirements for technical assistance in field of Broadcasting was carried out.

EUR RI 2: Development of broadband access and adoption of broadband

EUR RI 2 was implemented in partnership with several stakeholders including:

- AKEP, Albania

- RAK, Bosnia and Herzegovina

- CRC, Bulgaria

- HAKOM, Croatia

- Communications Regulatory Authority, Italy

- AEK, TFYR of Macedonia

- EKIP, Montenegro

- UKE, Poland

- RATEL, Serbia

- Energy and Water NRA, Italy

- Ministry of Economic Development, Italy

- Foundation Ugo Bordoni, Italy

- Ministry of Digital Affairs, Poland

- Ministry of Economy, Montenegro

- University of Montenegro

- FEEIT, Macedonia (ITU Centre of Excellence)

- ISQ, Portugal (ITU Centre of Excellence)

Implementation of this initiative has resulted in strengthened regional cooperation. The human capacity of over 1 000 professionals from more than 30 countries in the field of the development of high-speed networks

in Europe was enhanced. Events, meetings and online training events provided an opportunity for sharing best practices across the region. Specific studies and benchmarks have also been developed.

Regulatory Conference for Europe on "Next Generation Regulation" was held in September 2017 in Budva, Montenegro, within the framework of the Festival of ICT Achievements – INFOFEST 2017, building the capacity of professionals and providing an overview of the newest trends in ICT policy & regulation, innovative policy and regulatory tools for the digital economy and emerging challenges at the regional and subregional level, including those related to the 5G implementation.

A workshop to kickstart the IPV6 transition in Montenegro was held in September 2017, as a direct assistance request. This workshop assisted country in this process through the exchange of knowledge and experiences of the invited experts from the various ICT fields.

An Expert Group Meeting on Collaborating to Power the Smart Grids for Digital Growth was held in February 2017 in Geneva, Switzerland, targeting telecom and energy stakeholders. The aim of the meeting was to build on the concept of collaborative regulation and on the results of the ENERGISE project investigating the possible fields of cooperation and synergies between both sectors. This meeting was attended by 30 experts for telecom and energy sector representing 14 countries in Europe. One of the outcomes was the elaboration of a paper on *ICT for Sustainable Energy*, which highlights the impactful ICT related activities to be developed and ICT tools to be used to support the effective deployment of sustainable energy and smart grids (and other relevant technologies) within the context of the UN sustainable development goal number 7 namely "Affordable and clean Energy: Ensure access to affordable, reliable, sustainable and modern energy for all". The draft publication was presented for comments at the Regional Preparatory Meeting held in April 2017 in Vilnius followed by a webinar in September 2017 and the final version presented in March 2018 on the occasion of the Regional Forum on Sustainable Development. It is expected that further work be discussed at the Global Symposium for Regulators 2018.

More than ten training events were delivered, enhancing the capacity and knowledge of over 600 professionals, through the ITU CoE network training events on NGN, mobile broadband, broadband access, software quality control and testing, compliance assessment of telecommunication and data communication cables and devices, strategic aspects of Internet governance, and innovations in end-to-end quality of service network design.

EUR RI 3: Ensuring access to telecommunications/ICTs, in particular for persons with disabilities

EUR RI 3 was implemented in partnership with several stakeholders including:

- Ministry of Culture and Information of Serbia

- Ministry of Trade, Tourism and Telecommunications of Serbia

- Agency for Electronic Communications and Postal Services, Montenegro

- RAK, Bosnia and Herzegovina

- United Nations Development Programme of Montenegro

- United Nations Development Programme of Bosnia and Herzegovina

- ProForma

Implementation of this initiative resulted in strengthened regional cooperation of the relevant stakeholders in the field of accessibility, and human capacity was built for over 200 professionals from more than 30 countries. A series of events, meetings and online training activities provided an opportunity for sharing best practices across the region, as well as advice on policies and regulatory frameworks conducive to e-accessibility, including television/ICT applications for persons with disabilities.

Based on the ITU Report on Model ICT Accessibility Policy, a series of the national executive trainings has been launched as a joint activity of ITU, UN Country Teams, UNDP, NRA. The aim of the trainings was to build

the national capacities of the stakeholders making ICT accessibility reality at the national and establish national communities dealing with the ICT accessibility. In 2017 trainings were organized in Montenegro, Bosnia and Herzegovina. Four trainings are scheduled for 2018 targeting Albania, Serbia, FYR Macedonia, Turkey.

Particular attention was given to the development of the self-paced online course on ICT Accessibility and public procurement of accessible ICTs. Official launch of the training is planned for 2018 April.

In addition, cooperation with diverse European accessibility organizations was strengthened, including the European Disability Forum, European Commission, EBU and Global Initiative for Inclusive ICTs (G3ICT).

EUR RI 4: Building confidence and security in the use of telecommunication/ICTs

EUR RI 4 was implemented in partnership with:

- Information and Communication Technologies Authority of Turkey
- Safer Internet Centre of Poland
- Swiss Web Academy
- Regional Cooperation Council
- CERT-EU
- FIRST
- TF-CSIRT
- CERT of Romania, Luxembourg, Belgium
- OCECPR Cyprus
- CTU, Czech Rep.(ITU Centre of Excellence)
- NIT, Poland – (ITU Centre of Excellence)

Implementation of this initiative resulted in enhanced regional cooperation between relevant stakeholders in the field of building trust and confidence in the use of ICTs among children and young people, and in enhanced human capacity for more than 2500 professionals. The annual International Conference on Keeping Children and Young People Safe Online (2017) and a Digital Youth Forum (2017) have been held in Poland, and the annual Central European Cybersecurity Public-Private Dialogues (2017) have been held in Romania. New Public-Private Dialogues on Cybersecurity for Western Europe was held in Switzerland in December 2017.

A special contribution to Operation Uncool, prepared on the basis of the survey conducted during the Digital Youth Forum (Poland, 2017), presented to ITU's Council Working Group on Child Online Protection in October 2017.

The National CSIRT of Cyprusproject implementation started in 2017. This action included regular online meetings remote troubleshooting and remote assistance as well as 2 missions, presentations to all stakeholders and to OCECPR top management, the training of the newly recruited CSIRT-CY staff, advice on technical equipment purchase and the technical configuration of equipment/software, the development of processes and standard operating procedures.

The CERT Assessment exercise was conducted for Bosnia and Herzegovina in December 2017 and the final report is under review.

With the aim of building capacity of the cybersecurity professionals the ITU Joint ALERT – (Applied learning for Emergency Response Teams) Cyber Drill for Europe and CIS was organized in November in Moldova. The capacity of more than 150 professionals from 20 countries has been build. More than 15 CIRT teams have joined simulation exercises.

With the aim of building the regional human capacity and equipping policy makers with the benchmarks, in December 2017 a regional report for Europe based on the ITU Global Cybersecurity Index was released at a webinar as a side event to the IGF 2018.

EUR RI 5: Entrepreneurship, innovation and youth

EUR RI 5 was implemented in partnership with:

- RAK, Bosnia and Herzegovina

- Ministry of Information Society and Administration, FYR Macedonia

- Ministry of Trade, Tourism and Telecommunications, Serbia

- United Nations Industrial Development Organization (UNIDO)

- Ministry of Public Administration, Slovenia

- Regional Cooperation Council

- ICPE

Implementation of this initiative resulted in strengthened regional cooperation in the fields of entrepreneurship and innovation. More than 100 professionals from over 25 countries took part in diverse actions within the framework of the initiative. A series of knowledge exchanges, ecosystem reviews, as well as a country review, have built upon the methodology applied by ITU for the national review of ICT-centric innovation ecosystems. Strengthened cooperation has been developed with RCC, UNIDO and UNCTAD.

A Regional Forum for Europe and the CIS on Strengthening Innovation Capabilities in the ICT centric Ecosystem and Fostering the Growth of ICT Start-ups was held in Moldova, with 50 participants from 12 countries. It resulted in the production of a manifesto recognizing the critical role of ICTs across all sectors of the economy and the particular contribution of ICT-centric innovation and entrepreneurship to sustainable development, in particular in terms of the advancement of achievements in pursuance of SDG9 (Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation), where stakeholders share a set of common goals.

An innovation track has been established for WSIS Forum 2017. A toolkit for strengthening the ICT-centric ecosystem was launched during a session of the WSIS 2017 innovation track. Best practices for Europe were compiled as a result of this innovation track and will be supplemented with additional information and expert analysis to elaborate a future epublication.

A training-of-trainers event, based on the Innovation Toolkit with the aim of rolling out ICT-centric innovation ecosystem reviews in the region while creating an enabling environment for project generation in the field of innovation, was held in September 2017 in Slovenia. Some of trained experts have initiated work to develop the Digital Innovation Profiles of their countries namely for Bosnia & Herzegovina, FYR Macedonia and Serbia.

The annual Girls in ICT Day coincided with the ITU-D regional preparatory meeting held in Vilnius on 27 April 2017, giving ITU the opportunity to increase regional awareness on the gender issues. Event was jointly implemented by Kaunas University of Technology.