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| **Regional Preparatory Meeting  for WTDC-17 for Asia and the Pacific (RPM-ASP)** | P:\SUP\Logos\Post-150th Anniv\ITU-logo-UNblue.jpg | |
| **Bali, Indonesia, 21-23 March 2017** | | |
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| **3 March 2017** | |
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| **Vietnam (Socialist Republic of)** | | |
| PROPOSAL TO THE PRELIMINARY DRAFT ITU-D ACTION PLAN 2018-2021 | | |

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| **Priority area:**  Strategic Plan, Action Plan, Declaration  **Summary:**  Emerging technologies like the Internet of Things bring new opportunities for developing countries to accelerate economic growth. However, in order to fully realize potential benefits of IoT to economies, society and individuals, countries have to address a number of challenges.  This contribution proposes 2 additions to the outputs under Objective 2 of the Action plans: The issue of management of numbering resources for emerging technologies like IoT (output 2.1), M2M and the security challenges caused by deployment of IoT (output 2.2).  **Expected results:**  Assist ITU Member States and ITU D Sector Members in foster the development of infrastructure and services, including building confidence and security in the use of telecommunications/ICTs.  **References:**  Preliminary Draft ITU-D Action Plan 2018-2021 |

**Introduction**

Emerging technologies like the Internet of Things and Big Data, which are said to be primary drivers of the Fourth Industrial Revolution, are expected to bring new opportunities for developing countries to accelerate economic growth and drive productivity. Moreover, as more and more people in developing countries are now having access to broadband, creative ICT applications created by Internet of Things can efficiently and effectively help to solve traditional problems and quickly achieve the UN’s sustainable development goals. However, in order to fully realize potential benefits of IoT to economies, society and individuals, countries have to address a number of challenges.

Firstly, regarding the infrastructure aspect, it is required to ensure adequate resources including IP address, spectrum and telephone numbers for IoT services. While spectrum related issues have been indicated in the draft Action Plan, the need of allocation telephone numbers for IoT, which is clearly within the remit of national authorities of the telecommunications sector, should be addressed.

Secondly, deploying IoT presents new and unique challenges in terms of security and privacy. On one hand, as the number of online devices increase due to IoT, the more likelihood that users are vulnerable to cyber attacks. On the other hand, as IoT devices and services have to collect, analyze and transform data, IoT amplifies concerns about privacy issues.

Those challenges should be addressed by ITU to provide appropriate assistance to developing countries to harness the Internet of Things.

**Proposal**

We suggest some modifications in the Action Plan as in the attachment.

PART C

Buenos Aires Action Plan

Section 1 – Introduction

Buenos Aires Action Plan

Section 2 – Objectives and outputs

Objective 1 – Coordination: Foster international cooperation and agreement on telecommunication/ICT development issues

**Objective 2 – Modern and secure telecommunication/ICT Infrastructure: Foster the development of infrastructure and services, including building confidence and security in the use of telecommunications/ICTs**

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| **Outcomes** | **Performance Indicators** | **Outputs (Product and services)** |
| Enhanced capacity of ITU Membership to make available resilient telecommunication / ICT infrastructure and services, including broadband and broadcasting, bridging the digital standardization gap, conformance and interoperability, radio mornitoring and testing labs and spectrum management. | - Number of Guidelines, Handbooks, assessment studies and publications finalized for the relevant subjects  - Number of users/subscribers accessing the tools for the relevant subjects  - Number of experts participating in trainings, Seminars, Workshops for the relevant subjects and their satisfaction | 2.1 - Telecommunication/ICT infrastructure and services, including broadband and broadcasting, bridging the digital standardization gap, conformance and interoperability, numbering resources and spectrum management |
| Enhanced capacity of ITU Membership to effectively share information of, finding solution and respond to cyber threats and develop national cybersecurity strategies and capabilities, including capacity building. | - Number of cybersecurity national strategies implemented in countries that BDT contributed to develop  - Number of CIRT that BDT has contributed to establish  - Number of countries where BDT provided technical assistance and improved cybersecurity posture and awareness | 2.2 - Building confidence and security in the use of telecommunications/ICTs |
| Strengthened capacity of Member States to use telecommunication/ICT for disaster risk reduction and emergency telecommunications. | - Number of Member States where BDT assisted with disaster relief efforts both through provision of equipment and infrastructure damage assessments in the aftermath of a disaster  - Number of Member States that received BDT assistance in development and establishment of early warning systems  - Number of Member States that received BDT Assistance in developing and establishing national emergency telecommunications plans. | 2.3 - Disaster risk reduction and emergency telecommunications |

Output 2.1

Products and services on telecommunication/ICT infrastructure and services, including broadband and broadcasting, bridging the digital standardization gap, conformance and interoperability, numbering resources and spectrum management

1. Background

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 telecommunications1, information delivery, broadcasting and computing. The deployment of common broadband, including mobile, 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

Communications no longer just connect people: the Internet of Things (IoT) as well as Smart Grids concepts are fast becoming a reality.

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

1. Implementation framework

**Programme: Telecommunication/ICT network infrastructure and services**

The objective of this programme is to assist ITU Member States and ITU D Sector Members and Associates in maximizing the use of appropriate new technologies for the development of their information and communication infrastructures and services and building global Telecommunication/ICT infrastructure though partnership, bridging the digital standardization gap (BSG), Conformity and Interoperability, Numbering resources and Spectrum Management programme.

Main areas of work include:

**Next-generation networks including ICT Networks for Smart Grids**

The architecture of information and communication infrastructures is continuously changing to accommodate new requirements for a growing number of ICT-enabled services and applications, along with evolution to next-generation networks (NGN) and further evolutions, including NGN evolution and future networks.

Activities will be focused on:

* providing assistance to Member States on deployment and migration of their existing networks to NGN and further evolutions;
* assisting countries in planning the introduction and continuous adoption of new network elements and applications by making use of specialized planning tools;
* assisting countries in the digitization of analogue networks and in applying affordable wired and wireless technologies, including interoperability of ICT infrastructure;
* assisting countries in maximizing the use of appropriate new technologies for the development of the appropriate telecommunication / ICT networks including Smart Grids infrastructure and services;
* providing assistance to Member States on deployment of Next-generation ICT networks (NGN) and further evolutions into Smart Grids.

**Broadband networks: Wired and wireless technologies, including IMT**

The introduction of different broadband technologies, are providing high bandwidth and connectivity, It is therefore important to provide developing countries with an understanding of the different technologies available for broadband using both wired and wireless technologies for terrestrial and satellite telecommunications, including International Mobile Telecommunications (IMT).

Activities will be focused on:

* providing assistance to developing countries in their medium- to long-term planning for the implementation and development of national ICT broadband network plans;
* collecting and disseminating information and analyses on the current status of broadband backbone and submarine cables, in order to assist members in network planning, avoiding duplication of efforts and resources and disseminating information on different countries' experiences with the use of different technologies and services. This is including the creation of an online Interactive Transmission Map related to national backbone worldwide connectivity (Optical Fibres, Microwaves, Submarine Cables, Satellite Earth Stations) as well as of other key metrics of the ICT sector;
* promoting Internet exchange points (IXPs) as a long-term solution to advance connectivity, and supporting ITU members with deployment of/transition to IPv6-based networks and applications, in collaboration with relevant expert organizations.

**Rural communications**

Rural populations will need to be provided with telephony and broadband access, by connecting remote areas to the broadband core networks. Choosing efficient, cost-effective and fast deployment technologies – whether wired or wireless networks – will improve accessibility.

The focus in this area can be summarized as follows:

* providing information on suitable technologies for access, backhaul and source of power supply to bring telecommunications to rural, unserved and underserved areas;
* implementing projects on public/community broadband access points focusing on the provision of ICT services and applications through suitable technologies, including satellite, and business models which achieve financial and operational sustainability;
* disseminating information and analyses of the latest technologies and best practices through methods such as publications, symposia, seminars and workshops, taking into account the outputs of related ITU D study group activities.

**Bridging the Standardization Gap**

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.

Good and liable standards help to improve the establishment of regional and national set of technical requirements and ultimately contributes to access safe, interoperable and affordable ICT equipment/systems contributing reducing the digital divide.

The focus in this area will be:

* to promote and coordinate activities in the regions to support the implementation of the relevant standards tailored to developing country needs;
* organize, coordinate and provide necessary assistance to the activities of standardization Committees in the regions also through the organization of capacity building events and;
* provide the necessary assistance to the regional groups of ITU study groups;
* provide assistance to the regional telecommunication organizations for the setting-up and management of regional standardization bodies.

**Conformity and interoperability (C&I)**

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.

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.

The focus of BDT on this area will be as follows:

* cooperation with international organizations, industry and Conformity Assessment Bodies (CABs) as well as Accreditation Bodies, considered as key element for the success of the ITU C&I programme;
* educating technicians, policy-makers and businesses on the importance of C&I procedures and testing, mobilizing the resources required to implement regional and national C&I programmes, in cooperation with other relevant regional and international organizations;
* providing assistance to developing countries in the establishment of national, regional or subregional C&I programmes, and conducting assessment studies for facilitating the establishment of common conformance and interoperability regimes at national, regional and subregional level through the implementation of Mutual recognition agreements/arrangements (MRAs);
* preparing guidelines on this process which outline the technical and human resources required and the international standards to be applied.

**Broadcasting**

The objective of BDT work in broadcasting is to enable developing countries to achieve smooth migration from analogue to digital broadcasting and to follow the post-transition activities, such as the introduction of new broadcasting services and allocation of the digital dividend.

In particular, activities will be focused on:

* providing assistance on policy and regulatory frameworks for digital terrestrial broadcasting, including frequency planning and optimization of spectrum use; digital broadcasting guidelines and master plans for the transition from analogue to digital broadcasting and new broadcasting services and technologies;
* organizing regional meetings between ITU members on the use of spectrum for broadcasting services and other services.

**Numbering resources management for emerging technologies particularly the Internet of Things and M2M communications:**

* Providing assistance on numbering allocation issues to meet the demand of implementing the Internet of Things and M2M communications.
* Providing assistance to ITU members on planning the national numbering resource taking into account the development IoT and M2M technologies.

**Spectrum management**

Wireless technology has great potential to improve our quality of life. BDT works to strengthen national regulatory bodies in frequency planning and assignment, management and monitoring.

This will involve, in particular:

* continuing to maintain, update and expand the Spectrum Management System for Developing Countries (SMS4DC) software, providing technical assistance and conducting training activities for its deployment and use;
* providing spectrum-management assessments, master plans and recommended action plans for the further development of spectrum-management structures, procedures and tools, including new spectrum-sharing approaches;
* providing assistance on spectrum fee regimes, including direct assistance in the establishment of such regimes; in the harmonization of regional spectrum allocations, including coordination procedures in border areas; and in the optimization and cost-effective use of spectrum-monitoring systems and networks.

**Relevant regional initiatives**

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**Study group Questions**

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| Study Group X Questions |
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1. References to WTDC Resolutions, WSIS Action Lines and Sustainable Development Goals

**PP and WTDC resolutions and recommendations**

The implementation of PP Resolutions 32, 33, 34, 64, 101, 123, 125, 126, 127, 130, 131, 127, 135, 137, 139, 140, 159, 160, 161, 176, 177, 180, 188, 193, 197, 199, 200, 203 and WTDC Resolutions 9, 10 11, 15, 17, 18, 20, 21, 30, 32, 33, 35, 37, 47, 50, 52, 57, and 62 will support Output 2.1 and will contribute to the achievement of Outcome 2.1

**WSIS action lines**

The implementation of the WSIS Action Lines C1, C2, C3, C9 and C11 will support the Output 2.1 and will contribute to the achievement of Outcome 2.1

**Sustainable Development Goals and Targets**

Output 2.1 will contribute to the achievement of the following UN SDGs: 1 (targets 1.4, 1.5), 3 (targets 3.8, 3.d), 5 (target 5.b), 8 (target 8.2), 9 (targets 9.1, 9.a, 9.c), 10 (target 10.c), 11 (targets 11.5, 11.b), 16 (target 16.10), 17 (targets 17.6 and 17.7)

Output 2.2

Products and services on building confidence and security in the use of telecommunications/ICTs

1. Background

Information and communication technologies (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 email spam continues to be a priority among members. During the last four years, the ITU-D continued to work in this area.

BDT undertook many activities that offer development assistance to members and encourage cooperation among members, while Q-3/2 developed products and materials 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.

1. Implementation framework

**Programme: Cybersecurity**

The main purpose of this programme is to support the ITU membership, in particular developing countries, in building trust and confidence in the use of ICTs.

Cybersecurity needs to be dealt with taking into consideration the global, transnational nature of cyber threats.

The programme would seek in all cases to collaborate within ITU, in particular with ITU-T SG 17and ITU-D SG2 Question 3, as well as with all relevant organizations involved in building trust and confidence in the use of ICTs.

To this end, calling upon the breadth of the community in order to realizing broad partnerships will be one of the main enablers to achieve the programme’ s purpose.

The programme will:

* Support ITU Member States in the development of their national and/or regional cybersecurity strategies, taking into account the need of appropriately addressing security challenges caused by the deployment of IoT in order to fully realize its potential benefits to the economy, society and individuals.
* assist ITU Member States in establishing national cybersecurity capabilities such as Computer Incident Response Team (CIRTs) to identify, manage and respond to cyber threats, and participate in cooperation mechanisms at the regional and international level;
* organize cyberdrills at national and regional level, to strengthen institutional cooperation and coordination among the key actors and stakeholder;
* establish a culture of cybersecurity by sharing good practices collected through the Global Cybersecurity Index (GCI);
* support Member States in raising cybersecurity awareness, building their cybersecurity capacity and improving their cybersecurity posture;
* contribute to improving and maintaining the coherence of worldwide efforts in cybersecurity capacity building;

**Relevant regional initiatives**

The following regional initiatives will contribute to Outcome 2.2, consistent with WTDC Resolution 17 (Rev. Buenos Aires, 2017)

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**Study group Questions**

The following study group Questions will contribute to Outcome 2.2

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| Study Group X Questions |
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1. References to WTDC Resolutions, WSIS Action Lines and Sustainable Development Goals

WTDC resolutions and recommendations

The implementation of PP Resolutions 71, 101, 130, 174, 179 and WTDC Resolutions 17, 21, 30, 32, 45, 50, 52, 67, 69 and 80 will support Output 2.2 and will contribute to the achievement of Outcome 2.2

**WSIS action lines**

The implementation of the WSIS Action Lines C5 will support the Output 2.2 and will contribute to the achievement of Outcome 2.2

**Sustainable Development Goals and Targets**

Output 2.2 will contribute to the achievement of the following UN SDGs: SDG 4, 9, 11 and 16

Output 2.3

Products and services on disaster risk reduction and emergency telecommunications

1. Background

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 – preparedness, response, rehabilitation/recovery – 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.

In line with WTDC Resolution 34 (Rev. Dubai, 2014) many countries have benefited from this outcome. In the preparedness phase, ITU partner with countries and sector members to implement early warning systems in the most affected areas.

Disasters are often extend beyond the borders of a State, and 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.

1. Implementation framework

**Programme: Emergency telecommunications**

The programme will benefit the Member States in many fronts:

* providing assistance to countries in the development of national emergency telecommunication plans;
* strengthening and expanding ICT-based initiatives for providing medical (e-health) and humanitarian assistance in disasters and emergencies;
* ensuring that disaster-resilient features are incorporated in telecommunication networks and infrastructure;
* making ICT-based solutions available to members, including wireless and satellite-based technologies, in order to establish basic communications for the coordination of humanitarian work during and following disasters and emergencies;
* carrying out infrastructure damage assessments after disasters strike, and assisting countries to reconstruct and rehabilitate telecommunication infrastructure using such technologies;
* promoting regional and international cooperation for easy access to, and sharing of, information for disaster management, and exploring modalities to facilitate participation of all countries with economies in transition;
* promoting technical cooperation and enhancing the capacity of countries, particularly LDS, SIDS and LLDCs, to utilize ICT tools;
* identifying and establishing partnerships with relevant organizations dealing with the use of active and passive space-based sensing systems for the purpose of disaster prediction, detection and mitigation;
* achieve Goal 13 of the 2030 Agenda for Sustainable Development Goals.

**Relevant regional initiatives**

The following regional initiatives will contribute to Outcome 2.3, consistent with WTDC Resolution 17 (Rev. Buenos Aires, 2017)

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**Study group Questions**

The following study group Questions will contribute to Outcome 2.3

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| Study Group X Questions |
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1. References to WTDC Resolutions, WSIS Action Lines and Sustainable Development Goals

**PP and WTDC resolutions and recommendations**

The implementation of PP Resolution 36, 136 and WTDC Resolutions 34 will support Output 2.3 and will contribute to the achievement of Outcome 2.3

**WSIS action lines**

The implementation of the WSIS Action Lines C2 and C7 will support the Output 2.3 and will contribute to the achievement of Outcome 2.3

**Sustainable Development Goals and Targets**

Output 2.3 will contribute to the achievement of the following UN SDGs: 1 (target 1.5), 3 (target 3.9), 5 (target 5b), 11 (target 11b), 13 (targets 13.1, 13.2, 13.3)

Objective 3 – Enabling Environment: Foster an enabling policy, and regulatory environment conducive to sustainable telecommunication/ICT development

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| **Outcomes** | **Performance Indicators** | **Outputs (Product and services)** |
| Strengthened capacity of Member States to develop enabling policy, legal, and regulatory frameworks conducive to development of telecommunications / ICTs, including but not limited to capacity of forecasting the development of telecommunication/ICT technologies and the demand of spectrum usage. | - Timely release of the annual questionnaires to Members (Regulatory, Economics and Finance) and of data on the PREF knowledge centre (Policy, Regulation, Economics & Finance) and the ICTEye database  - Number of publications, best practice guidelines, online resources and toolkits developed and released on ICT policy and regulation as well as on economics and finance and number of website views/downloads of regulatory and policy data and publications and information on the ICT Eye online platform  - Number of participants in Global Symposium for Regulators, in regional regulatory and economic fora and workshops; and in Strategic dialogues on topical regulatory and policy issues; satisfaction rates of participants | 3.1 –Telecommunication / ICT policy and regulation |
| Strengthened capacity of Member States to produce high-quality, internationally comparable ICT statistics based on agreed standards and methodologies | - Timely release of ITU World Telecommunication/ICT Indicators (WTI) Database  - Number of data points and indicators available in WTI Database | 3.2 – Telecommunication / ICT statistics |
| Improved human and institutional capacity of ITU Membership to tap into the full potential of telecommunications/ICTs | - Number and level of individuals trained  - Number of participants who pass the training assessment  - Number of participants who are satisfied with the training  - Number of high-level training programmes developed | 3.3 - Human and institutional capacity building |
| Strengthened capacity of ITU Membership to integrate telecommunication/ICT innovation in national development agenda | - Number of initiatives (e.g. with guidelines and recommendation, DIY toolkits, etc.) and grassroots projects strengthening the innovations ecosystems for member states.  - Number of new partnerships that foster innovation ecosystems key stakeholders  - Number of partnership, initiative and projects translated into action for membership | 3.4 – Telecommunication / ICT innovation |

Output 3.1

Products and services on telecommunication/ICT policy and regulation

1. Background

In evolving towards a digital economy, an enabling environment for ICTs is increasingly recognized as critical for social and economic growth and competitiveness of countries. The ICT sector and the surrounding ecosystem is evolving rapidly and there is an even greater need for inclusive dialogue, cooperation and collaboration, including with other sectors where ICTs are bringing value. A sound and clear policy and regulatory environment that also considers the needs of other sectors is needed to ensure that all can benefit from ICT services.

1. Implementation framework

**Programme: Policy and regulatory framework**

This programme aims to support ITU membership in creating an enabling legal, policy and regulatory environments conducive to the development of telecommunications /ICTs in a digital economy, strengthening communication and collaboration with other sectors such as those in charge of health, education, energy and finance to leverage the cross-sectoral nature of ICTs on economic and social development, and ensuring that all can benefit from ICTs by building sound policy and regulatory frameworks.

The programme seeks to benefit from an extensive collaboration within ITU, in particular with ITU-D SG1 and SG2, ITU-R SGs and ITU-T SGs as well as with all relevant organizations where ICTs have an impact and bring value.

To this end, providing up to date regulatory and policy data, research and analysis and holding an inclusive dialogue with the wider ICT community and across the sectors realizing broad partnerships will be one of the main enablers to achieve the programme’ s purpose.

The programme will:

* provide ITU Members with the tools to keep informed of current developments with regard to the policy, legal, and regulatory frameworks as well as market developments in the ICT sector and the digital economies it enables;
* support ITU Member States in defining, elaborating, implementing and reviewing transparent, coherent and forward looking strategies, policy, , legal and regulatory frameworks as well as in moving towards evidence-based decision-making at the national and regional level in order to implement meaningful solutions and reforms to stimulate competition, investment and innovation, and foster global, regional and national ICT markets and ensuring affordable access for all to ICTs and the digital economy;
* provide tools and platforms to ITU-D Sector Members for an inclusive dialogue and enhanced cooperation among national and regional regulators, policy-makers and other telecommunication/ICT stakeholders as well as with other sectors of the economy on topical policy, legal, regulatory and market issues to help countries achieve a more inclusive information society and to raise national awareness about the importance of an enabling environment to allow digital empowerment and inclusion in a Smart connected society;
* provide institutional and human capacity building and technical assistance to ITU-D Sector Members on topical policy, legal, regulatory, as well as on economic and financial issues and market developments;
* convene a Global Forum for discussing global trends in regulation for ITU-D Sector Members and other national and international stakeholders, through organizing the Global Symposium for Regulators (GSR).

**Relevant regional initiatives**

The following regional initiatives will contribute to Outcome 3.1, consistent with WTDC Resolution 17 (Rev. Buenos Aires, 2017)

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**Study group Questions**

The following study group Questions will contribute to Outcome 3.1

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| Study Group X Questions |
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1. References to WTDC Resolutions, WSIS Action Lines and Sustainable Development Goals

**PP and WTDC resolutions and recommendations**

The implementation of PP Resolutions 21, 22, 102, 135, 138, 139, 174, 188, 191, 195, 196, 201 and WTDC Resolutions 8, 17, 22, 23, 30, 32, 37, 48, 64, 71, 77, 78 and 79 and Recommendations ITU-D 15 and ITU-D 16 will support Output 3.1 and will contribute to the achievement of Outcome 3.1

**WSIS action lines**

The implementation of the WSIS Action Lines C6 will support the Output 3.1 and will contribute to the achievement of Outcome 3.1

**Sustainable Development Goals and Targets**

Output 3.1 will contribute to the achievement of the following UN SDGs: 2 (target 2.a), 4 (target 4.4), 5 (target 5.b), 8 (targets 8.2, 8.3), 9 (targets 9.1, 9.c), 10 (target 10.3), 11 (targets 11.3, 11.b), 16 (targets 16.3, 16.6, 16.7, 16.10, 16.b), 17 (targets 17.6, 17.14, 17.16)

Output 3.2

Products and services on telecommunication/ICT statistics

1. Background

With the growing recognition of ICTs as a driver for sustainable development, 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. 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. They are indispensable for monitoring progress towards achievement of global development goals, such as the SDGs, the WSIS targets, and the ITU Strategic Goals included in the Connect 2020 Agenda.

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.

1. Implementation framework

**Programme: BDT data and statistics**

The main objective of the programme on data and statistics is to support the ITU membership in taking informed policy and strategic decisions based on high-quality, internationally comparable ICT statistics and data analysis.

The programme on ICT data and statistics will ensure that ITU maintains its global leadership as the main source of international ICT data and statistics, taking into consideration new and emerging trends. This will be done by delivering the following services and products:

* collecting, harmonizing and disseminating data and official statistics on the information society using a variety of data sources and dissemination tools, such as the World Telecommunication/ICT Indicators (WTI) Database, the ICT Eye ITU online portal, the UN Data portal and others;
* identifying new and emerging data sources, in particular those related to big data and the Internet of Things, and explore the feasibility of using such data for producing new indicators or improving existing ones;
* analyzing ICT trends and producing regional and global research reports, such as the Measuring the Information Society Report as well as statistical and analytical briefs;
* benchmarking information society developments and clarifying the magnitude of the digital divide (using tools such as the ICT Development Index and the ICT Price Basket) and measuring the impact of ICTs on sustainable development and the gender digital divide;
* developing international standards, definitions and methodologies on ICT statistics, in close cooperation with other regional and international organizations, in particular the members of the Partnership on Measuring ICT for Development, for consideration by the United Nations Statistical Commission;
* providing a global forum for discussing information society measurements for ITU members and other national and international stakeholders, through organizing the World Telecommunication/ICT Indicators Symposium (WTIS) and its related statistical expert groups;
* encouraging Members States to bring together different stakeholders in government, academics and civil society in raising national awareness about the importance of production and dissemination of high quality data for policy purposes;
* contributing to the monitoring of internationally agreed goals and targets, including the Sustainable Development Goals (SDGs), the WSIS targets as well as the targets included in the ITU Strategic Plan and the Connect 2020 Agenda, and developing related measurement frameworks;
* maintaining a leading role in the global Partnership on Measuring ICT for Development and its relevant Task Groups;
* providing capacity building and technical assistance to Member States for the collection of ICT statistics, in particular by means of national surveys, through the delivery of training workshops and the production of methodological manuals and handbooks.

**Relevant regional initiatives**

The following regional initiatives will contribute to Outcome 3.2, consistent with WTDC Resolution 17 (Rev. Buenos Aires, 2017)

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**Study group Questions**

The following study group Questions will contribute to Outcome 3.2

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| Study Group X Questions |
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1. References to WTDC Resolutions, WSIS Action Lines and Sustainable Development Goals

**PP and WTDC resolutions and recommendations**

The implementation of PP Resolutions 70, 131, 179 and 200 and WTDC Resolutions 8, 30 and 37 will support Output 3.2 and will contribute to the achievement of Outcome 3.2

**WSIS action lines**

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.

**Sustainable Development Goals and Targets**

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.

Output 3.3

Products and services on human and institutional capacity building

1. Background

Capacity building continues to be a cross-cutting issue that informs and augments the overall ITU-D mission. ICT-based education and training aimed at enhancement of human potential to leverage ICTs and improve individual livelihoods is particularly fundamental for developing countries. This will help them to improve skills and enable them to establish and develop their national e-strategies for sustainable development. Therefore, research undertakings and development of specialized training programmes in membership priority areas is required.

Furthermore, introduction of telecommunications/ICTs into education and human resources development for all groups is needed. This requires cooperation and partnerships between countries and broad stakeholders’ participation. The partnerships should include among others, academia, experienced professionals and experts as well as organizations with relevant expertise in capacity building activities.

1. Implementation framework

**Programme: Capacity Building**

The programme seeks to develop necessary capacity building policies, strategies in telecommunications/ICT and guidelines and deliver them to members, especially in developing countries, in order to assist them in enhancing and strengthening their human and institutional capacity and setting up national programmes. It will raise awareness among governmental and private sector decision-makers on the importance of capacity building. The programme will also undertake necessary steps in order to develop standards for ITU human capacity building activities.

The programme will implement a wide scope of capacity building interventions. Emphasis is given to trainingas a core capacity building tool forenhancing the capacity of ITU-D members, especially in developing countries, in order to apply ICTs effectively. Under this programme online learning and face-to-face learning opportunities (both synchronous and asynchronous), as well as blended solutions, will be provided for all stakeholders who would like to enhance their professional knowledge and skills. Delivering and promoting "train the trainer" activities to support ICT instructional and institutional sustainability will also play an important role in programme implementation.

The programme will:

* continue to encourage establishment of cooperative partnerships in multi-stakeholder fashion with all stakeholders specializing in ICT education, training and development activities;
* continue to engage qualified and experienced experts from the academia, private sector, government as well as international organizations in order to build human and institutional capacity and facilitate their involvement in capacity building activities;
* continue developmentof high-level training materials undertaken in collaboration with ITU subject matter experts, partners from the academia, research institutions and other organizations, who will ensure their quality control;
* ensure that there is continued enhancement of the ITU Academy portal and related services. The programme will also support development of documented administrative and technical procedures to ensure quality control of materials made available on the ITU Academy portal. It will also make possible provision of training resources and materials for sharing and recycling through the ITU Academy portal with all stakeholders;
* continue to promote and support Centres of Excellence network and Internet Training Centres as important and indispensable components of ITU capacity building;
* taking into account demonstrated value in terms of providing practical skills and hands-on learning, the programme will continue to organise knowledge-sharing platforms - fora for discussions on the impact and use of telecommunications/ICTs for education, lifelong learning, skills development and other capacity building components. These fora will also be important sources of information exchange, sharing of best practices and consensus building that bring together ITU-D members and other national and international stakeholders. Periodic regional and global meetings, workshops and seminars will also be organized;
* promote and support researchon and analysis of the latest sector trends and priorities thorough regular surveys and data collection. This will help to identify needs of the membership and provide required solutions;
* promote linkages between educational institutions and the ICT sector to ensure that graduates are better matched with sector needs.

All these capacity building products and services will assist the membership at a global, regional, sub-regional or national level. This will also contribute to the implementation of relevant activities and projects.

**Relevant regional initiatives**

The following regional initiatives will contribute to Outcome 3.3, consistent with WTDC Resolution 17 (Rev. Buenos Aires, 2017)

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| Region |
| **AFR Region** |
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| **AMS region** |
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| **ARB Region** |
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| **ASP Region** |
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| **CIS Region** |
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| **EUR Region** |
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**Study group Questions**

The following study group Questions will contribute to Outcome 3.3

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| Study Group X Questions |
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1. References to WTDC Resolutions, WSIS Action Lines and Sustainable Development Goals

**PP and WTDC resolutions and recommendations**

The implementation of PP resolutions 25, 71, 72, 137, 139, 140, 169, 176, 188, 189, 197, 199, 202 and WTDC Resolutions 73, 40, 11, 17, 35, 37, 38, 56, 48, 55, 56, 58, and 67 will support Output 3.3 and will contribute to the achievement of Outcome 3.3

**WSIS action lines**

The implementation of the WSIS Action Lines C4 will support the Output 3.3 and will contribute to the achievement of Outcome 3.3

**Sustainable Development Goals and Targets**

Output 3.3 will contribute to the achievement of the following UN 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), 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 (targets 17.9, 17.18)

Output 3.4

Products and services on telecommunication/ICT innovation

1. Background

Innovation has been recognized as a powerful engine for development to address social and economic challenges and navigate global challenges for policy makers and citizens alike.

1. Implementation framework

**Programme: Innovation**

This progamme is to support ITU-D memberships to foster ICT entrepreneurship and increased ICT innovation in the ICT ecosystem, while encouraging empowerment of grassroots key stakeholders and creating new opportunities for them in the ICT sector. There is also need to continue building a culture of innovation in the ITU-D membership to foster ICT entrepreneurship, ICT SMEs, startups creation and scale-up

This programme is to identify new policy-coherent (e.g. bottom-up and demand) approaches to ICT innovation, based on best practices, to be integrated into national development agendas, to identify needs, and deliver initiatives and projects with these new approaches.

The programme can deliver via such activities as:

* conducting update to ICT policies with new pillars based on innovation and entrepreneurship and to bridge gaps in the ecosystem with concrete activities (e.g. linking global ecosystems, fostering local ecosystem);
* developing high impact projects from the various stakeholder groups with new approaches (e.g. innovative bottom up in ICT centric Innovation ecosystem);
* creating mechanisms to foster new partnerships and initiatives that support upscale of ICT centric innovation activities, e.g. innovative partnership facilitation for funding of projects, and/or new instruments other than traditional project funding and delivery mechanisms, etc.;
* developing mechanisms to reach, engage, support, and nurture ICT centric innovation ecosystems with diverse stakeholders groups.

**Relevant regional initiatives**

The following regional initiatives will contribute to Outcome 3.4, consistent with WTDC Resolution 17 (Rev. Buenos Aires, 2017)

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| Region |
| **AFR Region** |
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| **AMS region** |
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| **ARB Region** |
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| **CIS Region** |
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**Study group Questions**

The following study group Questions will contribute to Outcome 3.4

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| Study Group X Questions |
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1. References to WTDC Resolutions, WSIS Action Lines and Sustainable Development Goals

**PP and WTDC resolutions and recommendations**

The implementation of PP Resolution 200 and WTDC Resolutions 17, 71 will support Output 3.4 and will contribute to the achievement of Outcome 3.4

**WSIS action lines**

The implementation of the WSIS Action Lines C1, C2, C3, C4, C5, C6, C7, and C11 will support the Output 3.4 and will contribute to the achievement of Outcome 3.4

**Sustainable Development Goals and Targets**

Output 3.4 will contribute to the achievement of the following UN SDGs: 1 (targets 1.1, 1.2, 1.4, 1.a, 1.b), 2 (target 2.a), 3 (targets 3.8, 3.a, 3.b), 4 (targets 4.1, 4.3, 4.4, 4.5, 4.6, 4.7, 4.a), 5 (targets 5.1, 5.5 ,5.a, 5.b, 5.c), 9 (targets 9.a, 9.b), 12 (target 12.7), 16 (targets 16.7, 16.8, 16.10, 16.b), 17 (targets 17.3, 17.6, 17.7, 17.8, 17.16 and 17.17)

Objective 4 – Inclusive Digital Society: Foster the development and use of telecommunications/ICTs and applications to empower people and societies for socio-economic development and environmental protection

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| **Outcomes** | **Performance Indicators** | **Output**  **(Products and services)** |
| Improved access to and use of telecommunication/ICT in Least Developed Countries (LDCs), small island developing states (SIDS) and landlocked developing countries (LLDCs) and countries with economies in transition | - Number of countries receiving [concentrated] assistance, with improved connectivity, availability and affordability telecommunications/ICTs  - Number of countries that received assistance, including number of fellowships requested and number of fellowships awarded | 4.1 - Concentrated assistance to LDCs, SIDS and LLDCs and countries with economies in transition |
| Improved capacity of ITU Membership to leverage and usage of ICT applications, including mobile, in high-priority areas (e.g. health, agriculture, commerce, governance, education, finance) safely | - Number of toolkits published and downloaded for national sectoral e-strategies development  - Number of ICT for Development Best Practices reports published  - Number of ICT for Development events/workshops/seminars and respective number of participants | 4.2 - ICT applications |
| Strengthened capacity of ITU Membership to develop strategies, policies and practices for digital inclusion, especially people with specific needs | - Number of digital inclusion resources developed and/or made available to members, including publications, policies, strategies, guidelines, good practices, case studies, training materials, online resources and toolkits, and number of website views of ITU-D digital inclusion websites  - Number of members aware of, trained or advised on digital inclusion policies, strategies and guidelines | 4.3 - Digital inclusion of people with specific needs |
| Enhanced capacity of ITU Membership to develop ICT strategies and solutions on climate-change adaptation and mitigation | - Number of Member States assisted by BDT for increasing awareness on impact of climate change on promoting the use of telecommunication/ICTs to mitigate negative effects;  - Number of Member States assisted by BDT in developing their climate change strategies policy and legislative frameworks  - Number of Member States assisted by BDT in developing e-waste strategy policy and regulatory frameworks | 4.4 - ICT climate-change adaptation and mitigation |

Output 4.1

Products and services on concentrated assistance to LDCs, SIDS and LLDCs and countries with economies in transition

1. Background

In line with WTDC Resolution 16 (Rev. Dubai, 2014) and Resolution 30 (Busan, 2014) of the Plenipotentiary Conference, on special measures for LDCs, SIDS, LLDCs and countries with economies in transition, which highlight the role of ICTs as enablers of national socio-economic development, provide BDT with a mandate to pay special attention to these categories of countries through concentrated assistance.

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. In 2014, the third international conference on SIDS will be held in Samoa in September, and the ten-year review of the Almaty Plan of Action for LLDCs will be carried out in November 2014.

Output 4.1 will deliver 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.

BDT is committed to fulfilling its mandate and striving to reach its commitments under the Istanbul Programme of Action (IPoA), 2011 in regard to ICTs for LDCs, the Samoa Pathway for SIDS (2014) and the Vienna Plan of Action (VPoA) for LLDCs (2014).

1. Implementation framework

**Programme: Concentrated assistance to LDCs, SIDS and LLDCs**

This programme will provide concentrated assistance to Least Developed Countries (LDCs), Small Island Developing States (SIDS), Landlocked Developing Countries (LDCs), Sendai framework for disaster risk reduction, the WSIS, and the agenda 2030 on Sustainable Development Goals.

The programme will:

* provide quality and timely delivery of assistance for the general socio-economic development of countries in special needs through telecommunications/ICTs, focusing on their specific needs for the development of broadband infrastructure, ICT applications and cybersecurity, policy and regulatory frameworks and human capacity building;
* promote an inclusive universal access to telecommunications/ICTs, provide assistance in disaster prediction, preparedness, adaptation, monitoring and mitigation to LDCs, SIDS, and LLDCs based on their priority needs;
* assist these categories of countries achieve internationally agreed goals, such as the agenda 2030 of the Sustainable Development Goals, the Sendai Framework for Disaster Risk Reduction, the Istanbul plan of action for LDCs, the Samoa Pathway for SIDS and the Vienna programme of action for LLDCs.

**Relevant regional initiatives**

The following regional initiatives will contribute to Outcome 4.1, consistent with WTDC Resolution 17 (Rev. Buenos Aires, 2017)

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| Region |
| **AFR Region** |
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| **AMS region** |
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**Study group Questions**

The following study group Questions will contribute to Outcome 4.1

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| Study Group X Questions |
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1. References to WTDC Resolutions, WSIS Action Lines and Sustainable Development Goals

**PP and WTDC resolutions and recommendations**

The implementation of PP Resolution 30 and WTDC Resolutions 16 will support Output 4.1 and will contribute to the achievement of Outcome 4.1

**WSIS action lines**

The implementation of the WSIS Action Lines C2, C6 and C7 will support the Output 4.1 and will contribute to the achievement of Outcome 4.1

**Sustainable Development Goals and Targets**

Output 4.1 will contribute to the achievement of the following UN SDGs: 1 (targets 1.4, 1.5), 3 (target 3.9), 7 (target 7.b), 8 (target 8a), 9 (targets 9a, 9b, 9c), 11 (target 11.5), 13 (target 13b), 17 (targets 17.8, and 17.18)

Output 4.2

Products and services on ICT applications

1. Background

ICT and particularly Mobile technology hold the most transformative power of our time. It has the capacity to connect even the most isolated communities to sources of information and services that can have direct impact on their livelihoods and quality of life. Services delivered via phones and Internet are critical to generating social impact in different life aspects.

Despite the rapid expansion of telecommunication and mobile technologies, many people around the world still remain away from the reach of the digital revolution. Many of the digital innovations didn’t achieve yet economically sustainable scale and are accessible only to a fragment of those who need them most.

In the wake of the adoption of the new Sustainable Development Goals, mainstreaming digital innovations in all sectors is unavoidable if we are to achieve those goals by 2030. All people particularly at the Bottom of the Pyramid (BOP) should have affordable access through smart devices to key information and life-enhancing services critical for sustainable development. This would require much more than just infrastructure – extending access must be accompanied by the availability of relevant ICT applications and services to extend access to digital education, healthcare, agriculture, energy and financial and commercial services.

1. Implementation framework

**Programme: ICT applications**

The main purpose of this programme is to support the ITU membership, in collaboration and partnership with other United Nations organizations and the private sector, in fostering the use of telecommunications/ICTs in the various facets of information-society development, in particular in underserved and rural areas, and for sustainable development and attaining the UN Sustainable Development Goals (SDGs) and the World Summit on the Information Society (WSIS) targets.

The programme will:

* elaborate national strategic planning frameworks and associated toolkits for selected ICT applications and services, in close collaboration with related UN specialized agencies and programmes and other international organizations with expertise in these domains. These frameworks and toolkits facilitate the elaboration of national sectoral e strategies and build capacity among the ITU membership to articulate national visions, objectives, strategies, action plans and performance indicators to support the implementation of large scale ICT applications and services that leverage existing infrastructure more effectively. This will result in effective harnessing of ICTs to better serve socio-economic development;
* support the deployment of ICT/mobile applications to improve the delivery of value added services in high-potential areas like e-health including mobile health, education, agriculture, governance, energy, mobile payment, etc., and to demonstrate and introduce the most suitable ICT utilization and applications to solve the existing challenges in sustainable development. The programme will act as a catalyst by launching appropriate partnership platforms – involving public and private partners – in order to foster the deployment of innovative ICT applications;
* conduct detailed studies and facilitate the sharing of knowledge and best practices on various ICT applications, particularly using broadband, mobile communication, open source and new technology advances and innovations such as cloud computing, sensor networks, Internet of things, M2M communications, intelligent terminals, social networks, etc., with the aim of improving citizens' access to value added services in areas like health, education, agriculture, governance, etc., and taking into consideration the means available for implementation (whether wireline, wireless, terrestrial, satellite, fixed, mobile, narrowband or broadband).

**Relevant regional initiatives**

The following regional initiatives will contribute to Outcome 4.2, consistent with WTDC Resolution 17 (Rev. Buenos Aires, 2017)

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| Region |
| **AFR Region** |
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**Study group Questions**

The following study group Questions will contribute to Outcome 4.2

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| Study Group X Questions |
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1. References to WTDC Resolutions, WSIS Action Lines and Sustainable Development Goals

**PP and WTDC resolutions and recommendations**

The implementation of PP Resolution 139, 183, 201, WTDC Resolutions 17, 21, 30, 32, 37, 50, 52, 53 and 54 will support Output 4.2 and will contribute to the achievement of Outcome 4.2

**WSIS action lines**

The implementation of the WSIS Action Lines C7 will support the Output 4.2 and will contribute to the achievement of Outcome 4.2

**Sustainable Development Goals and Targets**

Output 4.2 will contribute to the achievement of the following UN SDGs: 2 (targets 2.1, 2.3, 2.4, 2.5), 3 (targets 3.1, 3.2, 3.4, 3.5, 3.6, 3.a, 3.7), 4 (targets 4.1, 4.3, 4.4, 4.5, 4.c), 6 (targets 6.1, 6.4, 6.5), 7 (targets 7.1, 7.2, 7.3), 11 (targets 11.2, 11.6)

Output 4.3

Products and services on digital inclusion of people with specific needs

1. Background

Digital inclusion means ensuring the accessibility of telecommunications/ICTs and the use of telecommunications/ICTs for social and economic development, especially 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 and leverage telecommunications/ICTs.

1. Implementation framework

**Programme: Digital inclusion**

This programme aims to promote digital inclusion by supporting members to provide training on a range of digital skills, from digital and web literacy to more advanced ICT skills. Ideally, youth and children develop these skills where they are incorporated into national education plans and where schools are connected to the Internet, equipped with ICTs and staffed by teachers trained to impart such skills. However, these skills can also be developed out of the formal school context, including through public, private and social entrepreneurship community and national skills development programmes, as well as through self-paced online and mobile learning opportunities.

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 gender divide in telecommunication/ICT skills development.

In addition to skills provision, persons with disabilities, including age related disabilities, require accessible telecommunications/ICTs in which barriers to their use have been removed. 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.

Digital inclusion of all people for social and economic development requires comprehensive national digital inclusion policies, strategies and guidelines, including for digital skills development, updated telecommunications/ICTs policy, regulatory and universal access/service frameworks, as well as national broadband plans that promote accessibility and the digital inclusion of people with specific needs.

This programme will:

* raise awareness among members of the need for and importance of promoting digital inclusion;
* conduct research and share finding on digital inclusion practices and trends with members;
* develop digital skills training materials and/or promote partnerships to share existing digital skills training materials with members for use in their community and national digital skills development programmes; and
* develop digital inclusion policies, strategies and guidelines, advice members and provide training to members on digital inclusion policies, strategies and guidelines, including on accessible telecommunications/ICTs for persons with disabilities and aging populations and the development of telecommunications/ICTs in indigenous communities.

**Relevant regional initiatives**

The following regional initiatives will contribute to Outcome 4.3, consistent with WTDC Resolution 17 (Rev. Buenos Aires, 2017)

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| Region |
| **AFR Region** |
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| **AMS region** |
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| **ARB Region** |
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**Study group Questions**

The following study group Questions will contribute to Outcome 4.3

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| Study Group X Questions |
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1. References to WTDC Resolutions, WSIS Action Lines and Sustainable Development Goals

**PP and WTDC resolutions and recommendations**

The implementation of PP Resolutions 70, 175, 184 and 198, and WTDC Resolutions 11, 17, 21, 30, 32, 37, 46, 50, 52, 55, 58, 68 and 76 will support Output 4.3 and will contribute to the achievement of Outcome 4.3

**WSIS action lines**

The implementation of the WSIS Action Lines C2, C3, C4, C6, C7 and C8 will support the Output 4.3 and will contribute to the achievement of Outcome 4.3

**Sustainable Development Goals and Targets**

Output 4.3 will contribute to the achievement of the following UN SDGs: 4 (targets 4.3, 4.4, 4.5), 5 (targets 5.5, 5b), 8 (targets 8.2, 8.3, 8.5, 8.6, 8b), 10 (target 10.2), 17 (target 17.17)

Output 4.4

Products and services on ICT climate-change adaptation and mitigation

1. Background

In line with resolution 34 (Rev. Dubai, 2014) on the role of telecommunications/ICTs in disaster preparedness, early warning, rescue, mitigation, relief and response, which notes the importance for humankind of ITU publications relating to this area of activity; and Resolution 182 (Rev. Busan, 2014) of the Plenipotentiary conference on the role of telecommunications/information and communication technologies in regard to climate change and the protection of the environment.

1. Implementation framework

**Programme: Climate change adaptation and mitigation**

This programme will assist Member States in particular LDCs, SIDS, LLDCs and countries with economies in transition to:

* improve the use of Information and Communication Technologies to reduce the impact of climate change through the development of information systems, assessments and observations;
* enhance capacity of Member States in formulating comprehensive strategies and measures for providing assistance to developing countries on the use of ICTs to help mitigate and respond to the devastating effects of climate change;
* adopt metrics and common standards for evaluating the environmental impact of the use of telecommunications/ICTs, as well as the positive contribution telecommunications/ICTs can make to the broader economy;
* facilitate Member States' participation in bilateral, regional and global research, assessments, monitoring and mapping of climate impacts, and development of response strategies;
* take into account the impact of e waste when evaluating the contributions of telecommunications/ICTs to greenhouse gas (GHG) emission;
* develop of e-waste policy;
* develop standards-based monitoring and early-warning systems linked to national and regional networks;

**Relevant regional initiatives**

The following regional initiatives will contribute to Outcome 4.4, consistent with WTDC Resolution 17 (Rev. Buenos Aires, 2017)

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| Region |
| **AFR Region** |
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| **AMS region** |
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| **ARB Region** |
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**Study group Questions**

The following study group Questions will contribute to Outcome 4.4

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| Study Group X Questions |
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1. References to WTDC Resolutions, WSIS Action Lines and Sustainable Development Goals

**PP and WTDC resolutions and recommendations**

The implementation of PP Resolution 182 and WTDC Resolutions 34 will support Output 4.4 and will contribute to the achievement of Outcome 4.4

**WSIS action lines**

The implementation of the WSIS Action Lines C7 will support the Output 4.4 and will contribute to the achievement of Outcome 4.4

**Sustainable Development Goals and Targets**

Output 4.4 will contribute to the achievement of the following UN SDGs: 3 (target 3.9), 5 (target 5b), 11 (targets 11b), 13 (targets 13.1, 13.2 and 13.3)

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