Report by the Secretary-General

REPORT ON THE IMPLEMENTATION OF THE STRATEGIC PLAN AND THE ACTIVITIES OF THE UNION, JULY 2022 – APRIL 2023

Purpose

Report on the implementation of the Strategic Plan for the Union 2019-2023 corresponding to the period July 2022 to April 2023

Action required by the Council

Council is invited **to approve** the report.

Relevant link(s) with the Strategic Plan

As instructed by Resolution 71 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, this is the annual report to Council on the implementation of the strategic plan and activities of the Union (combining the requirement by No. 102 of the Convention, i.e. an annual activities report; and by No. 61 of the Convention, i.e. a report on the implementation of the strategic plan)

Financial implications

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References

[Resolutions 71](Rev. Bucharest, 2022) of the Plenipotentiary Conference, [Resolution 151](Rev. Bucharest, 2022) of the Plenipotentiary Conference, [Resolution 200](Rev. Bucharest, 2022) of the Plenipotentiary Conference; and [CV102 and 61](link)

Foreword to the report on the implementation of the strategic plan and activities of the Union

July 2022 – April 2023

Dear members of the ITU family,

This report covers one of the most intensive and decisive periods in ITU history.

In a span of a few months, we held our World Telecommunication Standardization Assembly (WTSA-20) and World Telecommunication Development Conference (WTDC-22), setting the stage for a Plenipotentiary Conference (PP-22) that made universal connectivity and sustainable digital transformation the two strategic goals of our Union going forward.

The choice before us is clear: do everything in our power to use digital to rescue the Sustainable Development Goals (SDGs) in the little time we have left, or risk falling further behind and facing a future marked by increasing digital inequalities and environmental breakdown.

This is happening against a backdrop of tectonic shifts in tech and our planet's ecosystem.

The explosion of generative AI and the prospect of artificial general intelligence are raising concerns about humanity's very existence, prompting global calls for regulation. At the same time, technological development may also represent one of our best hopes to put climate targets and the SDGs back on track.

Quantum information technology continues to advance, driven by the emergence of powerful new computers. The mobile broadband market has already started talking about 6G. And then, there is the metaverse.

Space is also emerging as a driver of sustainable development, with the space economy reaching new heights – and it is just the beginning.

Everywhere we look, we see and feel technology racing ahead at warp speed. What has not accelerated fast enough, however, is digital inclusion.

As this report makes clear, we are still facing crippling digital divides affecting women, rural and other vulnerable populations, both within and between countries.

It is a multifaceted question that involves matters of infrastructure but also affordability, trust, accessibility, and skills. And oftentimes, more data is required to guide decisions and asses the progress and impact of our work.

In the face of these challenges, our priority – and my main objective – is to build a fit-for-purpose and fit-for-future ITU. The ITU that could help the world to rise to the challenges and leverage the opportunities of today. That means focusing our efforts in three areas: technical expertise, strategic partnerships, and organizational excellence.

ITU's globally recognized technical work in radio-frequency spectrum and associated orbit resources, standards, emerging technologies, the environment and smart sustainable cities and communities, cybersecurity, and digital inclusion is the answer to our ever-more complex digital world. It provides the building blocks for the entire global digital ecosystem.

Because today's challenges are too big for any one player to face alone, ITU has formed strategic partnerships with sister UN agencies and others. That is the bedrock of the flagship

initiatives highlighted in these pages, including AI for Good, EQUALS, the Broadband Commission, the WSIS Forum, Early Warnings for All, Giga, and Partner2Connect.

To better serve our members and deliver with our partners, ITU must achieve organizational excellence across our entire organization. The goal for this ''One ITU'' is to be open and transparent, accountable and trusted, innovative and agile, results-based, and financially stable.

The next few months promise to be as intensive and decisive as the last ten months – with the SDG Digital Day on 17 September in New York and the World Radiocommunication Conference 2023 (WRC-23) later this year in Dubai, coinciding with COP28. And the whole next year will be pivotal in setting the foundation for the Union's transformation journey.

Ultimately, the measure of success will be the impact on universal connectivity and sustainable digital transformation. We can only achieve this by working together.

The clock is ticking and failure is not an option.

Doreen Bogdan-Martin

Secretary-General
International Telecommunication Union

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1. Introduction

The International Telecommunication Union (ITU) plays a major role in the UN system as the UN agency for ICTs. The ITU allocates global radio-frequency spectrum and associated satellite-orbits resources, develops technical standards that ensure networks and technologies seamlessly interconnect, and strives to improve access to and use of telecommunications/ICTs for underserved communities worldwide.

Digital technology is increasingly vital in transforming economic and social activity around the world – and the digital agenda is today a priority across the entire UN system. It is of special importance in accelerating the achievement of the Sustainable Development Goals (SDGs), including through the UN Secretary-General's Our Common Agenda.

The digital landscape is evolving faster than ever and ITU has been tracking the development and convergence of a constellation of emerging technologies. These include AI-driven predictive and generative technologies, quantum (offering phenomenal computational capabilities) and next-gen infrastructure such as 5G/6G, IoTs and space communications. ITU is also tracking new paradigms of human computer interaction offered by neurotech, and next generation environments such as the metaverse. While this raft of fast emerging technologies has the potential to drive sustainable development, it also brings with it challenges that may exacerbate current risks or generate new ones.

For example, while the recent release of generative AI applications offers transformative potential for wide-ranging and positive impact, we recognize equally AI's potential for negative impacts on such areas as employment, trust, transparency, accountability, bias, climate footprint and the digital divide.

The space industry is also fast becoming a key driver of digital transformation with entry of new actors and industries, and the deployment of satellites to extend the reach of broadband, including helping enable global universal IoT coverage.

This rise in prominence of digital technologies and associated evolution in the UN system has led to the emergence of multiple workstreams among various entities whose work intersects with our mission and mandates in areas of telecommunications/ICTs. Although this may present a significant challenge of avoiding duplications and ensuring that the ITU's mandate is well understood, it also offers ITU an opportunity to address these issues in a spirit of broad collaboration and partnerships, leveraging its expertise and unique position as the UN's specialized agency for ICTs.

The three world conferences WTSA-20, WTDC-22 and PP-22 underlined the membership's pronounced ambition to have ITU play a key role in the digital landscape – empowering all citizens of the world to enjoy the benefits of these technologies. ITU key focus now is the preparation for WRC-23, including through the CPM which took place in March 2023.

ITU's objective is to build a world where everyone can reap the benefits of digital transformation and digital connectivity, regardless of nationality, location, gender, age or background. To transform this vision into reality, ITU is committed to building an organization that is not only effective, but also embodies our core values of transparency, accountability, openness, universality, people-centeredness, service-orientation, and of being results-driven. Supported by these values, our aim is to ensure that the Union services the needs of Member States, its broader membership and the world at large, and in so doing help bridge the digital divide that continues to impact so many communities.

To enhance the impact of its services and products, the management is committed to ensure that ITU finds its appropriate role in emerging areas, such as AI, data, green digital transformation, digital resilience and metaverse. The Union will leverage digital technologies to support data-driven, agile decision-making, and enhance organizational efficiency. Through efficient allocation and use of limited resources, the Union will better rationalize the provision of common services and products throughout its three Sectors and General Secretariat, leveraging expertise across *One ITU*. This approach will reinforce ITU's leadership position in contributing to the digital development, and at the same time will enhance our culture, finance, system and processes, our workplace and governance.

2.   ITU Plenipotentiary Conference (PP-22)

The 21st ITU Plenipotentiary Conference (PP-22) convened in Bucharest, Romania, set out the general policies and strategic direction of ITU for the coming period, adopting four-year strategic and financial plans and addressing key issues related to information and communication technologies (ICTs) in alignment with requests of ITU members. It took place from 26 September to 14 October in Bucharest's Palace of Parliament and was chaired by Mr. Sabin Sărmaş, President of Romania's House of Deputies Information Technology and Communications Committee.

Participants and main outcomes:

3234 total participants	**2** deputy prime ministers	**64** ITU Sector Members
2940 physical participants	**87** ministers	**4** United Nations and other entities
294 virtual participants	**71** deputy ministers	**68** observer organizations
184 Member States represented + Observer State of Palestine	**106** ambassadors	
	27 heads*	

Heads of intergovernmental regional telecommunications organizations and other special guests

Final Acts of the Plenipotentiary Conference Bucharest, 2022

- Signed by 159 Member States
- 56 modified Resolutions
- 2 modified Decisions
- 6 new Resolutions
- 1 suppressed Resolution

One-third (33 per cent) of the delegates to PP-22 were women, compared to 27 per cent at ITU's previous Plenipotentiary, held in Dubai in 2018.

Key decisions

ITU elections:

PP-22 also featured elections for the organization's top management posts – Secretary-General, Deputy Secretary-General, and Directors for Radiocommunication, Telecommunication Standardization, and Telecommunication Development – along with the 12-seat Radio Regulations Board and 48-seat ITU Council (See all PP-22 election results).

ITU Strategic and Financial Plans 2024-2027:

The Bucharest meeting adopted ITU's Strategic (Res 71) and Financial (Dec. 5) Plans for 2024-2027.

ITU's four-year strategy highlights key priorities for radiocommunication, standardization and development work designed to connect the world, drive an inclusive global digital transformation, and help achieve the SDGs set out by the United Nations for 2030.

For more information on PP-22, see:
- *ITU News Magazine,* "Connect and Unite: Outcomes of the ITU Plenipotentiary Conference"
- PP-22 Closing Press Release
- Daily highlights
- Final acts

3.   Impact of ITU's work – progress towards the Connect 2030 Agenda

This section summarizes the main results and progress achieved towards the Goals and 2023 Targets set up in the Strategic Plan for the Union 2020-2023, to which Member States have committed in PP Resolution 200 (rev. Bucharest, 2022), the Connect 2030 Agenda. Table 1 below summarizes the status of achievement (by the end of 2022) of the 2023 Targets. All relevant charts are shown on the Dashboards here.

Growth (Internet access & affordability)

Latest ITU data shows that progress towards 2023 Strategic Targets aiming for world overall (including broadband) connectivity (households and individuals) is well on track. The world average affordability of connectivity is also on track to achieve the 2023 Target.

On track for achievement too is the number of countries now having adopted a broadband plan or digital agenda/strategy – data shows that this number is close to 160. Although the Target stipulates "all" countries (i.e. 193) but achieving at least 90% of all countries (i.e., 170 countries) brings this very close to what can practically be achievable. Interestingly, as shown in the Dashboard here, the total number of countries increased to 169 in 2020 and dropped to 155 in 2022. This decline in numbers is explained as follows: the majority of countries worldwide adopted broadband plans or digital agendas in the years following the 2008 financial crisis up until around 2015. Many were time-bound and spanned 5-10 years. Most have been replaced but some haven't – and as soon as they expire, they are not officially counted.

No complete data is available yet on the interaction with online government services. As of 2020, only 38 countries have provided data on this.

Inclusiveness (closing the gaps)

Gender: as described in section 4.6 below, the gender gap in Internet use has increased by 20 million people, with 259 million more men than women using the Internet in 2022. Women non-users now outnumber male non-users by 18 per cent, up from 11 per cent in 2019. Women are about 12 per cent less likely to own mobile phones than men – virtually unchanged from 2019. Among those not owning mobile phones, women outnumbered men by 39 per cent in 2022.

Moreover, the regions with the highest Internet use also have the highest gender parity scores. LDCs and landlocked developing countries (LLDCs), however, show a trend of low Internet use and a low gender parity score, with hardly any progress towards gender parity over the last three years.

The Targets for LDCs both in affordability and household penetration are not on track for achievement by the end of 2023 (see Dashboard here). However, the 2023 Target for individuals using the Internet in the LDCs had already been achieved by 2022 – increasing from 20.3 in 2018 to 36.1 in 2022, exceeding the actual 2023 Target of 30.

Accessibility for persons with disabilities targets show an increase of almost 50 per cent in four years (from 61 to 90) in terms of the number of countries having established a regulatory framework to ensure ICT accessibility for persons with disabilities. However, the figures remain far from the 2023 Target ("all countries").

Urban-rural access to the Internet: Worldwide, 82 per cent of urban dwellers (51.7 per cent in the LDCs) are using the Internet in 2022. This is 1.8 times higher than the percentage of Internet users in rural areas (1.9 times higher in the LDCs).

Insufficient data is as yet available to assess progress on the proportion of youth/adults with telecommunication/ICT skills. Regarding Internet penetration in the world, 74.8 per cent of youth (15-24 years) are using the Internet, as compared to 64.8 per cent for the rest of the population. In the case of LDCs, these figures are 47.5 per cent and 33.3 per cent respectively.

Sustainability

More data is required to fully assess the impact of ITU work in the area of the environment. For example, the global e-waste recycling rate was measured at 20 per cent in 2017 and around 17 per cent in 2019, before the COVID-19 crisis. Further data is as yet unavailable. These values come from the Global E-Waste Monitor, which will be updated by the end of 2023. Nevertheless one can consider progress in regard to e-waste is off track for achievement by 2023 (the Target value is at least 30 per cent). On the other hand, the Target of having 50

per cent of countries (more than 85) with in-place e-waste policy, legislation or regulation by 2023 is achieved: numbers increased from 48 countries in 2016 to about 90 in 2020.

Regarding the impact of ICTs in climate change, the current Target focuses on the contribution of ICTs to reduce the environmental footprint of other sectors (net telecommunication/ICT-enabled Greenhouse Gas abatement). ITU has produced a set of recommendations designed to measure this impact (see the work of ITU-T SG5/9), but these methodologies have not yet been used to collect data.

Another relevant variable, for which there is no 2023 Target, is that of the overall ICT environmental footprint. A baseline to measure the total ICT Sector's GHG emissions as **610 $MtCO_2e$/year** was established around 2015 by GeSi, using methodologies from the above mentioned ITU-T SG5/9. No other measurement has been undertaken after this date. As a proxy, ITU is tracking/monitoring emissions, energy use and climate commitments of the 150 leading tech companies (representing about 75 per cent of the total tech industry) via the annual industry assessment report: Greening Digital Companies. Data and information on their commitments are collected directly from these companies. See also the key highlights from this report. The 2023 report is planned to be published in July.

In relation to the Target on cybersecurity ("improve cybersecurity preparedness of countries, with key capabilities: presence of strategy, national computer incident/emergency response teams and legislation"), the percentage of countries having CIRTs/CERTs has increased from about 55 per cent in 2018 to 65 per cent in 2022.

Regarding the number of countries having a National Emergency Telecommunication Plan as part of their national and local disaster risk reduction strategies, data will be available soon. However, the available baseline (2020) shows that only 25 countries reported having such a plan that year, suggesting that this Target ("all countries should have a National Emergency Telecommunication Plan as part of their national and local disaster risk reduction strategies") may not be on track.

Innovation

The 2023 Target assessing progress toward this Goal reads "All countries should have policies/strategies fostering telecommunication/ICT-centric innovation". The actual data collected refers to the "Number of Countries having policies/strategies fostering innovation" (not specifically "telecommunication/ICT-centric"). With this caveat, the number of countries has increased from 66 countries in 2016 to 93 in 2022, with still a substantial way to go to reach "all" countries.

Partnership

As a proxy to assess the "increased effective partnerships with stakeholders and cooperation with other organizations and entities in the telecommunication/ICT environment" we have been using a qualitative measurement from ITU's annual membership survey. Two questions have been added since 2019: 1) "Is your organization collaborating with other ICT stakeholders more than in previous years?" and 2) "Is your organization benefiting from increased synergies by working with others?"

Results from the survey suggest that members' perception of the importance of partnership/collaboration is high and has increased since 2019. Indeed, in 2019, 56 per cent of respondents agreed or strongly agreed with the statement in question 1 (while only 4 per cent disagree or strongly disagreed with it), and in 2022 these percentages moved to 60 per cent agreement and 1 per cent disagreement, respectively. This Target is therefore on track

for achievement by 2023. For question 2, percentages were 70 per cent and 2 per cent in 2019, and 72 per cent and 1 per cent in 2022.

Table 1   Status of achievement of the ITU Strategic Targets

Goal	TARGET, By 2023:	Status	
Growth	Target 1.1: 65% of households worldwide with access to the Internet	Achieved	
	Target 1.2: 70% of individuals worldwide will be using the Internet	On track	
	Target 1.3: Internet access should be 25% more affordable (baseline year 2017)	On track	
	Target 1.4: all countries adopt a digital agenda/strategy	On track	
	Target 1.5: increase the number of broadband subscriptions by 50%	On track	
	Target 1.6: 40% of countries to have more than half of broadband subscriptions more than 10 Mbit/s	On track	
	Target 1.7: 40% of the population should be interacting with government services online	Not enough data	
Inclusive-ness	Target 2.1: in the developing world, 60% of households should have access to the Internet	Achieved	
	Target 2.2: in the least developed countries, 30% of households should have access to the Internet	Off track	
	Target 2.3: in the developing world, 60% of individuals will be using the Internet	On track	
	Target 2.4: in the least developed countries, 30% of individuals will be using the Internet	Achieved	
	Target 2.5: the affordability gap between developed and developing countries should be reduced by 25% (bs. 2017)	On track	
	Target 2.6: broadband services should cost no more than 3% of average monthly income in developing countries	On track	
	Target 2.7: 96% of the world population covered by broadband services	On track	
	Target 2.8: gender equality in Internet usage and mobile phone ownership should be achieved	Off track	
	Target 2.9: enabling environments ensuring accessible telecommunications/ICTs for persons with disabilities should be established in all countries	Off track	
	Target 2.10: improve by 40% the proportion of youth/adults with telecommunication/ICT skills	Not enough data	
Sustain-ability	Target 3.2: increase the global e-waste recycling rate to 30%	Off track	Not enough data
	Target 3.1: improve cybersecurity preparedness of countries, with key capabilities: presence of strategy, national computer incident/emergency response teams and legislation	On track	
	Target 3.3: raise the percentage of countries with an e-waste policy, legislation or regulation to 50%	Achieved	
	Target 3.5: all countries should have a National Emergency Telecommunication Plan as part of their national and local disaster risk reduction strategies	Off track	Not enough data
	Target 3.4: net telecommunication/ICT-enabled Greenhouse Gas abatement should have increased by 30% (since 2010)	Not measured yet	
Innovation	Target 4.1: all countries should have policies/strategies fostering telecommunication/ICT-centric innovation	Off track	Not enough data
Partner-ship	Target 5.1: increased effective partnerships with stakeholders and cooperation with other organization and entities in the telecommunication/ICT environment	On track	

The newly adopted Strategic Plan 2024-2027 takes these results into account when defining the new Goals and 2027 Targets. Based on the narratives above however, world averages may not be enough to assess the situation accurately in many cases. They may appear on track for achievement globally, but closer analysis of LDCs or a specific focus on women and girls will reveal that in reality the situation is <u>not sufficiently</u> improving. The appropriate assessment of new 2027 Targets will often require that data be broken down by level of development and/or disaggregated by gender, age, location, etc.

4.   Key themes of work

4.1   Spectrum/orbit regulation and management

The Second Session of the Conference Preparatory Meeting 2023 (CPM23-2) prepared a consolidated report supporting the work of World Radiocommunication Conference 2023 (WRC-23) and based on:

- Presentation, discussion, rationalization, and updating of material from responsible groups, addressing WRC-23 agenda items, while taking into account contributions

from ITU Member States and Radiocommunication Sector Members relating to the regulatory, technical, operational and procedural matters to be considered by the conference.

- Inclusion, to the extent practicable, of reconciled differences in approaches as contained in the source material or – in the case where all efforts to reconcile differences have been exhausted – alternative approaches with justifications were included.

Results of the processing of space notices and other related activities

	2019	2020	2021	2022	Total 2019-2022
Coordination and notification requests	1 174	886	1 141	1 208	4 409
Requests for broadcasting-satellite and associated feeder links Plans	73	186*	69	65	393
Requests for fixed-satellite service Plan	51	27**	71	77	226

* Including 90 requests pursuant to Resolution 559 (WRC-19).
** Following receipt of submissions under Article 7 of Appendix 30B, the processing of other submissions has been postponed in application of § 7.3 of this Article.

Terrestrial notices

	2019	2020	2021	2022	Total 2019 – 2022
Notices recorded in the MIFR/Plans	81 602/ 3 690	252 555/5 355	83 592/ 3 824	63 893/	481 462/
Review of findings for terrestrial stations recorded in the MIFR	164	5 221	51 468		57 097
Notifications of coast and ship stations for recording in the ITU maritime database	1982	1 865	1918		8 179
High-frequency broadcasting requirements	34 344	31 738	20 806	11 311	98 199
Monitoring observations concerning the monitoring programme at 2 850-28 000 kHz/ and 406-406.1 MHz	30 825/ 253	25 642/ 174	17 513/ 136	25 530/ 407	99 510/ 970
Reports of harmful interference	1 088	1 165	1 166	1 007	4 426

Improvement of ITU-R software

The Radiocommunication Bureau (BR) continues to produce software applications and databases to best facilitate the use of ITU-R outputs by ITU membership. In 2022, BR continued to update the software that enables users to query and analyse the Table of Frequency Allocations (TFA) in Article 5 of the Radio Regulation, as well as other texts including WRC resolutions, referenced ITU-R Recommendations and rules of procedure. This application extracts regional and country-specific regulations for the presentation of regional or national tables of frequency allocations.

Progress in terrestrial services

- Development of the software and tools for processing coordination requests (RR No. 9.21) and HAPS notifications (validation, examination, and publication tools).
- Migration of the TerRaSys database from Ingres to SQL Server.
- Development and enhancement of the eTerrestrial web platform, integrating eMIFR, ePropagation, eValidation tools for all terrestrial services and specific eFXM and eBroadcasting tools (eQuery, ePub, eTools and MyAdmin).
- Enhancement of the online tools for GE84[1] (GE84 compatibility and optimization tools) to include the consideration of terrain elevation in the field strength calculations.
- Re-engineering and modernization of High Frequency Broadcasting software dealing with the application of Article 12 of the RR.
- Modernization of the Maritime Service Publications (List V, List IV and Maritime Manual) to improve the user experience. The project includes the creation of the sales platform desktop and mobile applications to retrieve information and anti-counterfeit solutions.
- Development of a new online platform HITS – Harmful Interference to Terrestrial Services – for treatment of the reports of harmful interference and infringements.
- Re-engineering and integration of eValidation to WISFAT 2.0.

Progress in fulfilling the BR Space Information Systems roadmap (RAG-19, 2012)

- Rewrite legacy software for technical examination: PFD, Mspace.
- Design and development of the BR Space Information System (BR SIS): BRSIS-Capture to replace SpaceCap, migrate SNS database on Ingres to SQL Server, migrate SRS MDB to SQLite, review SNTrack, review SNS Online and merge with SNL Online.

Achievements resulting from activities for space applications

- Implementation of Resolution 907 (Rev.WRC-15): Use of modern electronic means of communication for satellite network-related administrative correspondence.
- Implementation of Resolution 908 (Rev.WRC-15): Electronic submission of satellite network filings.
- Release of a tool to assist administrations in communicating to the Bureau, at notification stage, the coordination status with respect to affected administrations.
- Migration of the BRIFIC (Space services) from a DVD format to an online mechanism.
- Implementation of *instructs the Director of the Radiocommunication Bureau* 2) and 6) of Resolution 186 (Rev.Bucharest 2022) and the publication of CR/495 published on 26 January 2023 about Online Information of Space Radio Monitoring Facilities.

4.2   Standardization – foundations to shape technologies of today and tomorrow

ITU's standardization work comprises telecommunications standards (ITU-T Recommendations) and radiocommunications standards (ITU-R Recommendations).

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[1] ITU, in collaboration with the African Telecommunication Union (ATU), launched a process for the optimization of the GE84 Plan for African countries to achieve an efficient use of the 87.5-108 MHz (FM) band for analogue sound broadcasting and to allocate new frequencies to FM broadcasting to meet the increasing need for additional frequencies

ITU-T Recommendations

ITU approved [255 new and revised ITU-T Recommendations and related texts](#) in the reporting period (July 2022 to April 2023), as of 20 March 2023. For all ITU-T Recommendations in force, see the [catalogue of ITU-T Recommendations](#). Executive summaries of ITU-T study group (SG) meetings can be found on their respective [homepages](#).

More than 20 ITU-T study group meetings were held in the reporting period.

As related work, during the 2022-2024 study period there have been a series of ITU-T focus groups (FGs). Information on the activities and deliverables of each group can be found on their respective homepages. See also the [ITU-T focus groups homepage](#). In the corresponding sections of this report, reference to the relevant FGs is provided. Other active FGs are, for example, Costing models for affordable data services (FG-CostingData); and [Testbeds Federations for IMT-2020 and Beyond (FG-TBFxG).](#)

ITU-R Recommendations

During the period of July 2022 to April 2023 the ITU-R approved more than 35 new or revised ITU-R Recommendations, as listed below. The full set of ITU-R's recommendations is available at: https://www.itu.int/pub/R-REC.

ITU-R Working Party	New or revised ITU-R Recommendations
WP 1A - Spectrum engineering techniques	SM.2151-0, SM.2152-0
WP 1C - Spectrum monitoring	SM.1875-4, SM.2149-0
WP 3J - Propagation fundamentals	P.581-3, P.676-13, P.841-7, P.1057-7, P.2145-0, P.2146-0, P.2148-0,
WP 3L - Ionospheric propagation and radio noise	P.368-10, P.372-16, P.684-8
WP 3M - Point-to-point and Earth-space propagation	P.680-4, P.682-4, P.1622-1, P.2147-0
WP 5A - Land mobile service above 30 MHz* (excluding IMT); wireless access in the fixed service; amateur and amateur-satellite services*including the exact frequency of 30 MHz	M.1732-3
WP 5B - Maritime mobile service including the Global Maritime Distress and Safety System (GMDSS); aeronautical mobile service and radiodetermination service	M.1730-2, M.1849-3, M.2010-2, M.2058-1, M.2135-1,
WP 5C - Fixed wireless systems; HF and other systems below 30 MHz in the fixed and land mobile services	F.1520-4
WP 6A - Terrestrial broadcasting delivery	BS.643-4, BS.1660-9, BS.2107-1, BT.2016-3
WP 6B - Broadcast service assembly and access	BT.1833-4, BT.2153-0, BT.2154-0
WP 6C - Programme production and quality assessment	BS.775-4
WP 7B - Space radiocommunication applications	SA.2155-0, SA.2156-0

4.3   Emerging technologies – ITU shaping frameworks to manage their development

Artificial intelligence

ITU provides a global platform for all stakeholders to address the opportunities and challenges relating to the safe and inclusive development of AI technologies and applications.

ITU's work in the area of AI includes, amongst others:

- [AI in standardization](#), including the relevant [ITU-T focus groups](#) (see Section 4.2 for further detail).
- [AI for Good](#) (see Section 4.9 for further detail).

- UN Activities on AI Report. UN High-Level Committee on Programmes (HLCP) Interagency Working Group on AI (IAWG-AI): The IAWG-AI, established during the 40th HLCP session in October 2020 to focus on policy and programmatic coherence of AI activities, is co-led by ITU and UNESCO.
- Global Initiative on AI and Data Commons.
- AI/ML Competitions ("Challenges"): In 2022, The ITU AI/ML Challenges were hosted in three main themes: AI/ML in 5G Challenge; GeoAI Challenge; and tinyML Challenge.

Internet of Things

ITU continues the development of standards related to interoperable IoT technologies and applications. This includes topics relating to big data aspects of IoT and smart cities and communities (SC&C) and digital transformation relevant to IoT and SC&C aspects.
See also the ITU-T SG20 homepage and List of Recommendations.

Quantum information technology

Quantum information technology (QIT) improves information processing capability by harnessing principles of quantum mechanics. ITU's work in the area of QIT includes:

- QIT in standardization: Several ITU-T study groups, including SGs 11, 13 and 17 are developing ITU-T Recommendations in this field. Nine standards have been developed since 2022 including X.1715 and Y.3809-3814.
- Joint Coordination Activity on Quantum Key Distribution Network (JCA-QKDN), established by TSAG in January 2023, coordinates the standardization work on QKDNs within ITU-T and acts as the point of contact within ITU-T and other standards development organizations, consortia and forums also working on QKD related standards. JCA-QKDN's first meeting was held on 22 March 2023.

Metaverse

The ITU-T Focus Group on metaverse (FG-MV) was established under the Telecommunication Standardization Advisory Group (TSAG) on 16 December 2022. The lifetime of the FG-MV is one year, with the possibility of an extension. The FG-MV lays the groundwork for international standards for the metaverse. The group is analysing the technical requirements of the metaverse to identify fundamental enabling technologies in areas from multimedia and network optimization to digital currencies, Internet of Things, digital twins, and environmental sustainability.

The first meeting of the FG-MV took place on 8-9 March 2023 in the Kingdom of Saudi Arabia and had over 650 participants – a record attendance for an ITU-T focus group.

During this first meeting, the FG-MV established eight working groups, ranging from General, Applications & Services, Architecture & Infrastructure, Virtual/Real World Integration, Interoperability, Security, Data & Personally Identifiable Information (PII) Protection, Economic, Regulatory & Competition Aspects, to Sustainability, Accessibility & Inclusion. A Task Group on Collaboration has also been established under the FG-MV.

The initial FG-MV Workplan was agreed, including the FG-MV structure, the list of deliverables and information concerning the designated Chairmen and Vice-Chairmen for the working groups (WGs) and task groups (TGs).

The first FG-MV meeting was preceded by the first ITU Forum on Embracing the metaverse. The forum provided a platform to stimulate global dialogue on the challenges and

opportunities generated by the metaverse. More than 600 participants joined the forum in person and online. The Outcome Document and video highlights can be found here.

4.4   Environment and smart sustainable cities and communities

Building circular economies for e-waste around the world

Through its e-waste policy and data programme ITU has helped nine countries become more circular economies: Botswana, Burundi, Dominican Republic, Gambia, Malawi, Namibia, Niger, Rwanda, and Uzbekistan.

In close cooperation with the UN Environment Programme, over 300 individuals from these countries were consulted – including public and private sector actors, civil society, ICT ministries, ICT regulators, ministries of environment and environment agencies, customs, industry and trade departments and municipalities. Results included the finalization of national e-waste regulation in Dominican Republic and revision of the Extended Producer Responsibility Framework for the management of e-waste in Rwanda.

An additional six countries in East Africa (Burundi, Kenya, Rwanda, South Sudan, Tanzania, and Uganda) received extensive support in improving the quality, collection process and interpretation of e-waste data – so critical in setting and assessing targets, in tracking progress, in identifying best practices and in addressing the e-waste challenge.

Other activities on e-waste include:

- e-learning courses, including *E-waste Policy Development* (170 people registered in 2022 and 293 people registered thus far in 2023), and *Deep Dive into the Extended Producer Responsibility,* developed and launched in 2023 (96 people registered).
- Documents and standards, including an ITU thought paper – Global and Complementary Actions for Electronics Extended Producer Responsibility; a Circular and Sustainable Public Procurement Guide for ICTs; and a new standard on circular public procurement of information and communication technologies.

Climate change and ICTs

ITU activities during COP-27 in Sharm el-Sheikh, Egypt, included: an exhibit on "Turning digital innovation into climate action"; four UN Climate Change Learning Partnership "Climate Classrooms"; three side events co-organized with the Ministry of Communications and Information Technology of Egypt (MCIT); and presence as an invited panellist at a number of MCIT pavilion events.

In October 2022, ITU jointly organized the 14th Symposium on ICT, Environment, Climate Change and Circular Economy in Rome, Italy, focusing on Sustainable Digital Transformation and the Role of ICTs and Digital Technologies in Achieving Net Zero Carbon.

Greening Digital Companies: Monitoring Emissions and Climate Commitments report was jointly authored by ITU and the World Benchmarking Alliance and documents the emissions and energy use of 150 of the world's leading tech companies. The report was launched during two online webinars.

In December 2022, the Coordination Committee approved ITU's first environmental sustainability policy. According to the Greening the Blue Report 2022, based on 2021 data, ITU's GHG emissions decreased significantly as official travel was on halt due to COVID-19. More details on efforts to reduce ITU's footprint can be found on the ITU entity page on Greening the Blue.

Additionally, ITU is:

- Continuously developing energy efficiency standards for 5G equipment and specifying edge data centre infrastructure.
- Identifying measures necessary to assess counterfeit ICT products' environmental impact and promoting awareness of this.

The next United Nations climate conference, COP28, offers a prime opportunity to showcase and scale up digital climate action.

The International Telecommunication Union (ITU), together with partners spanning the UN, governments, business, and civil society, will convene the Green Digital Action track at COP28 to:

- Examine the key role of data and digital technologies to accelerate progress on climate commitments.
- Mobilize bold action to promote the green and digital transitions among governments, business, and civil society and others, including through the Partner2Connect Digital Coalition.
- Catalyse opportunities for partnerships and broader coordination with key existing mechanisms like the Marrakech Partnership, the World Standards Cooperation, the Digital with Purpose movement or the UN Early Warning for All initiative.

Information and communication technologies (ICTs) play a crucial role in climate monitoring, climate change adaptation and early warning systems; and mitigation measures, such as increasing energy efficiency, supporting green networks, and accelerating the development of circular economies along the value chain. At the same time, rapid uptake of data and devices increases energy consumption, ICT-sector emissions, material used, and e-waste all over the world.

The global digital transformation needs to go hand in hand with the shift to green energy solutions and a circular economy.

COP28 is a chance to connect technology industries with governments and civil society — particularly with ITU's World Radiocommunication Conference (WRC-23), happening in the same host city, Dubai, UAE, at the same time.

ICTs: reducing risk, improving response to crisis, early warning and emergency telecommunications

ITU-D has assisted a total of 28 countries in identifying key priorities for disaster management by delivering National emergency telecommunication plans (NETPs) to the Commonwealth of Dominica, Fiji, Grenada, Kiribati, and Mongolia – and by supporting Ecuador, Iraq, Malawi, Nepal, Palestine, Paraguay, Peru, Saint Lucia, Saint Kitts and Nevis, Solomon Islands, Somalia, Sudan, and Tonga with the development of their NETPs. ITU-D developed an emergency telecommunication assessment of the South African Development Community (SADC), to assist the 16 Member States of SADC in setting their emergency telecom priorities.

ITU-D is taking a lead role in the new Early Warning for All initiative, which stipulates that every person in the world should be protected by an early warning system by 2027.

ITU's response work has been of critical importance in guiding first responders and in helping countries hit by disasters to restore connectivity:

- October 2022, ITU deployed satellite equipment (Iridium phones and BGANs) to Nicaragua to support the country in their relief efforts following Hurricane Julia.

- March 2023, the ITU emergency telecommunications team deployed Thuraya satellite phones to Malawi and Iridium satellite phones to Mozambique in support of the disaster response to cyclone Freddy.
- The BDT Disaster Connectivity Map (DCM) was activated in five countries following disasters, and was successfully used to identify communication gaps and guide response efforts by first responders in Tonga, which was affected by a volcanic eruption and tsunami in 2022.
- The DCM was also activated to guide responders in Turkey and Syria after the devastating earthquake in February 2023; in Zimbabwe in response to Cyclone Freddy; and in Vanuatu after it was struck by Cyclones Judy and Kevin.

ITU-D online trainings: a total of 398 participants followed the three ITU Online Training Modules on Emergency Telecommunications. These cover 1) the development of NETPs; 2) the organization of tabletop simulation exercises (TTX); and 3) information on the Tampere Convention and its benefits. All three online modules are self-paced and are available on the ITU Academy Platform.

Digital transformation for people-oriented cities and communities

ITU-T Study Group 20 approved ITU-T Recommendations related to the study of smart cities and communities. The latest working group under the U4SSC Thematic Group on City Platforms will work on data and APIs in smart city platforms. Four new cities participated in the U4SSC Key performance indicators (KPIs) for smart sustainable cities (SSC) implementation project, which falls under the framework of U4SSC. A new module on smart sustainable city governance has been added in the Toolkit on Digital Transformation for People-Oriented Cities and Communities.

For further details, see the list of U4SSC Deliverables and List of U4SSC KPIs Deliverables.

4.5 Cybersecurity: building confidence and security in ICTs

C23/38 reports in detail on ITU's activities in relation to Resolution 130 (Rev. Bucharest, 2022), ITU's role as sole facilitator for WSIS Action Line C5, and other decisions by the membership on strengthening the role of ITU in building confidence and security in the use of ICTs. The shows the complementary nature of ITU work programmes, including BDT, TSB, and BR activities in this domain.

The report contains information related to technical standardization work bring carried out in the various study groups, capacity building efforts including assistance with Computer Incident Response Teams, cyber drills and various other training activities, and multistakeholder partnerships.

4.6 Digital inclusion – ensuring inclusive, equal access and use of ICTs for all

Gender

Report C23/6 provides further details on gender activities.

ITU is working to close the digital gender gap and the gender gap in ICT professions. ITU is encouraging girls and young women to take up ICT careers and studies, as well as providing digital technology training and mentoring through initiatives such as International Girls in ICT Day, African and Americas Girls Can Code Initiatives, EQUALS, Women in Cyber and Talking Tech.

As of 2022, 94 countries had adopted national digital agendas. However only 21 of them have a specific focus on women and girls. ITU's Handbook on mainstreaming gender in digital policies is designed to support the inclusion of gender equality in policy-making.

ITU's "Network of Women" (NOW) communities increase visibility and representation of women in ITU's work and decision-making by providing a supportive environment for women delegates. There are networks for each sector: ITU-R, ITU-T (formally WISE), and ITU-D. A targeted gender-responsive PP-22 campaign to increase the participation of women saw 33 per cent women compared to 29 per cent as of PP-18. ITU-T is seeking input on ways to accelerate gender balance in all ITU-T's work – and are encouraging and tracking participation in an online training to better incorporate gender in standards development.

ITU reports annually to the UN system-wide action plan for gender equality and mainstreaming (UN-SWAP) based on 17 performance indicators. ITU's 2021 Report Card notes that ITU met or exceeded requirements for only 11 out of the 17 indicators. Data for 2022 was submitted in February, meeting only 7 of the indicators. The 2022 report card is expected later this year.

ITU's first woman Secretary-General was elected at PP-22 and took office in January 2023. As of the end of 2022, women occupy only 31 per cent of senior leadership posts (P5-D1-D2), representing only a nominal improvement over recent years. More effort is needed to close the gender gap. Such efforts include a new Parental Leave policy, introduced to help attract and retain top talent, extends 16 weeks leave to parents regardless of gender plus an additional 10 weeks for birthing mothers.

Further information on www.itu.int/gender and www.itu.int/genderdashboard.
Youth

2022 was a pivotal year for Generation Connect – the overarching initiative of the ITU Youth Strategy that aims to amplify youth voices in the digital development dialogue – mandated through updated WTDC Resolution 76 (Kigali, 2022) and PP Resolution 198 (Bucharest, 2022).

Key activities included: the inaugural Generation Connect Global Summit in Kigali, Rwanda; participation of Generation Connect Youth Envoys in the ITU Plenipotentiary Conference in Romania [PP-22] in October 2022, involving plenary sessions, intergenerational dialogues and a Youth Engagement Workshop for PP-22 delegates; participation in ITU-D Study Groups Meetings involving two Intergenerational Dialogues on the side-lines of the meetings – "Youth Advancing Meaningful Connectivity" and "Youth Empowerment for Digital Transformation".

Generation Connect hosted several virtual sessions in external global events in 2022: ECOSOC Youth Forum; the World Food Forum; YOUNGA; Misk Global Forum in Riyadh, Saudi Arabia. So far in 2023, Generation Connect has participated and contributed to the LDC5 Youth Track in Doha, Qatar, the World Mobile Congress in Barcelona, Spain; and CSW-67 meetings in New York.

In 2022, Generation Connect Digital Learning Certificate was launched through ITU Academy (with 80 young people enrolled); new episodes of the Generation Connect Podcast were released; and ongoing collaboration with the Kofi Annan Changemakers programme was strengthened.

The six Generation Connect Youth Envoy Regional Groups have expanded with 180 Youth envoys in 120 countries. Generation Connect Europe Youth Envoys hosted a GC-EUR Digital Jam and Generation Connect Asia & Pacific Youth Envoys participated in Huawei Asia-Pacific Seeds for the Future Programme in Bangkok in 2022.

In March 2023, WSIS Forum 2023 and the Generation Connect in collaboration with the Geneva International Model United Nations (GIMUN, a Geneva-based Student Run NGO Founded in 1999) launched the WSIS Generation Connect Youth Prize. This year's theme is "Digital Future Through Meaningful Inclusion of Youth".

ICT/Accessibility

During the reporting period, over 700 ITU members, stakeholders, and participants from over 60 countries strengthened their knowledge in ICT/digital accessibility through a variety of activities. ITU-D provided ICT accessibility expert advice to support ITU members' efforts to foster digital inclusion through executive training for regional policy and decision-makers; provided support on regional events "Accessible ICT for ALL" (Asia and the Pacific, Americas, Europe, Arab States); organized speaking slots, interventions and/or moderations of interactive discussions within related regional events; shared good practices on policies and strategies, raising awareness across more than 25 events and meetings on the availability of over 70 ITU-D tools and resources in ICT/digital accessibility; participated in the 1st Technology Forum of the Zero Project Conference ("*for a world with zero barriers*"); and in the WSIS 23 Session on "Strengthening the Collaboration of Digital Literacy for Disabilities".

Within the same period, 761 participants registered for ITU online self-paced training on ICT accessibility and over 3 200 stakeholders and /or interested parties used related ITU-D resources. In December 2022, ITU-D in partnership with the ILO jointly launched a Guidebook on accessibility of online job application and recruitment systems and the self-paced training How to ensure that online job applications and recruitment systems are accessible to all. Additional online training courses and toolkits were made available in other languages: How to ensure inclusive digital communication during crises and emergency situations (Arabic) and The ITU toolkit and self-assessment for ICT accessibility implementation "Towards building inclusive digital communities" (Russian and Spanish). Additionally, a practical guidebook on ICT/digital accessibility for experts or agencies developing and implementing the Smart Villages and Smart Islands Programme was formulated to improve the knowledge of stakeholders developing programmes that require digital inclusion in the context of villages and islands digitalization.

ITU-D resources are made available free of charge and are available in multiple languages.

Telehealth: A new ITU and WHO common global standard was developed on "Accessibility of telehealth services" and launched in June 2022. It defines use cases and requirements for accessible telehealth services that implementers and service providers should meet in order to guarantee that the needs of persons with disabilities are met when using such services. The work with WHO on safe listening is now being expanded to look at gaming and e-sports. ITU is also operating with WHO a focus group to step up AI's contribution to health, developing a benchmarking framework to support developers and regulators in assessing whether AI-based health solutions are fit-for-purpose – as has been done for medical equipment.

ITU-R has recently updated the Report ITU-R BT.2207 "Accessibility to broadcasting services for persons with disabilities" and the Report ITU-R SM.2153 "Technical and operating parameters and spectrum use for short-range radiocommunication devices".

ITU-T improved the ITUSearch user experience. It now follows ITU design guidelines, with filters easier to use, and on-screen instructions assisting users.

Indigenous people

A 1st on-line training programme "Innovative communication tools to strengthen the capacities of indigenous communities with a focus on how to develop, manage, and operate community Networks" was delivered through the ITU Academy, drawing 200 inscriptions from

Indigenous Peoples (45 per cent women) across 16 countries (Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru and Venezuela).

A 2nd blended training programme "Managers in ICT Networks in Indigenous and Rural Communities in Latin America" was delivered through ITU Academy and face-to-face in Colombia, graduating 40 professionals with a balanced number between men and women.

The 2023 edition of the Indigenous training on Managers in ICT Networks in Indigenous and Rural Communities in Latin America was launched to ensure the evolving needs and requirements of Indigenous and remote communities are met.

A WSIS Session was held in March 2023 on "Capacity Building and Enabling Environments for Meaningful Access in Indigenous and Rural Communities", where ITU shared its experience and lessons learned over the last 18 years in promoting digital inclusion for Indigenous and remote communities.

Ageing populations

By 2050, the world's population of people aged 60 years and older will double (2.1 billion). In the context of the two global mega trends – population ageing and the rise of technology – the socio-economic landscape will face significant change and challenges.

During the reporting period and in support of the UN Decade of Healthy Ageing 2021-2030, ITU-D shared subject matter expertise in digital inclusion through training, presentation, interventions and speaking slots in 17 thematic events and workshops on the topics related to older persons including: Leaving No One Behind in an Ageing World A UN DESA Global Policy Dialogue, the High-Level Forum on the Silver Economy 2022, a series of webinars on "*Mainstreaming Knowledge On Ageing - From Engagement To Action In The Protection And Participation of Older Persons"*, a partnership of UN Agencies (IOM, ITU, OHCHR, UN DESA, UNFPA, UNHCR, UNITAR, UN WOMEN, WHO) and 7 civil society organizations. During these events, ITU-D work on "Ageing in the digital world", was also shared.

To support the global efforts in the implementation process, ITU-D also promoted resources such as the Guidelines Report Ageing in the Digital World -from Vulnerable to Valuable, and related video tutorials available with captions in Arabic, Chinese, English, French, Russian and Spanish, as well as the online self-paced training on ICTs for better ageing and livelihood in the digital landscape, available in English, French and Spanish for ITU members and all involved stakeholders to strengthen their capacity on how to use ICTs to develop innovative solutions with economic and social benefits, assisting them in turning this challenge into opportunity.

4.7 Strategic partnerships for SDGs

Cooperation, resource-sharing and win-win arrangements that benefit governments, industry and users – coupled with a "whole-of-government" approach – are helping drive towards technology as a basic enabling service that benefits all. As part of this effort, ITU puts emphasis on forging strategic partnerships that deliver better outcomes, tangible results and real impact on the pathway to achieving the SDGs through ICTs.

This section summarizes key partnerships over the period of this report.

Partner2Connect

The Partner2Connect Digital Coalition (see Document C23/INF/8) is a multistakeholder alliance launched by ITU in close cooperation with the Office of the Secretary-General's Envoy on Technology, the United Nations Office of the High Representative for the Least Developed

Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS), and in line with the UN Secretary-General's Roadmap for Digital Cooperation. The Partner2Connect Digital Coalition fosters meaningful connectivity and digital transformation globally, with a focus on but not limited to the hardest-to-connect communities in LDCs, LLDCs and small island developing states (SIDS).

Broadband Commission – putting broadband firmly on the international policy agenda

The Broadband Commission for Sustainable Development was established in 2010 by ITU and UNESCO to boost the importance of broadband on the international policy agenda and expand broadband access in every country – key in accelerating progress towards national and international development targets. Led by H.E. President Paul Kagame of Rwanda and Carlos Slim Helù of Mexico, co-chaired by ITU's Secretary-General and the UNESCO Director-General, in 2022, the Broadband Commission community engaged over 50 Commissioners, including seven new members, over 150 external experts of the working groups, and 15 strategic partners.

The Commission held 18 advocacy events, selected in cooperation with ITU and including relevant ITU conferences – two in-person meetings hosted by the Commission and attended by ITU elected officials:

- Annual Spring Meeting, co-hosted by Rwanda at the sidelines of the WTDC-22 in Kigali.
- Annual Fall Meeting held in New York, co-hosted by UNICEF in conjunction with the UNGA-77.

The Commission participated in 10 UN agency-led events (including WSIS, the UN Transforming Education Summit (TES), the United Nations High-level Political Forum on Sustainable Development (HLPF), and the Fifth United Nations Conference on the Least Developed Countries (LDC5)) and six private sector conferences.

Publications, open statements, working group reports, and SDG-related research across the reporting period include:

- The State of Broadband Report 2022, *Accelerating Broadband for New Realities*, the Commission's annual flagship report.
- Three open statements to UN processes and events (TES, HLPF, LDC5), SDG4 research compilation on Quality Education and Recommendations on SDG5: Gender Equality.
- Seven working groups, with three completing their work: AI capacity building, smartphone access, and virtual health and care. Two working groups are in progress: data for learning and connecting MSMEs.

Strategic outreach: the Commission gained over 600 newsletter subscribers, has more than 11 000 combined followers on Twitter, LinkedIn, and Facebook. Over 26 000 readers have downloaded reports in the reporting period.

EQUALS – promoting access, skills and ICT leadership for women and girls

As a co-founding partner of the EQUALS Global Partnership for Gender Equality in the Digital Age, and as the partnership's host agency, ITU supported efforts in the Access, Skills, Leadership and Research Coalitions in 2022, including becoming co-leader of the Skills Coalition with GSMA. EQUALS has 113 partners representing private sector, civil society, academia, international organizations and UN agencies.

With partners, ITU promoted the new EQUALS Her Digital Skills initiative, the goal of which is to reach 1 million girls and women by 2026. This involves digital skills workshops, e-mentoring with established tech professionals, and a certification badge program. In the reporting period, 14 workshops and e-mentoring cycles were delivered covering 15 countries and benefiting more than 1 000 young girls trained and mentored.

In December 2022, the annual Equals in Tech Awards, recognized six winners for outstanding initiatives designed to bridge the gender digital divide. The ceremony was held at ITU headquarters in Geneva, in the context of the first annual Partner2Connect meeting. Winners were selected from over 155 finalists representing more than 55 countries.

The ITU-EIF[2]-EQUALS joint initiative "Tech as a Driver of Women's Economic Opportunity" continued to present digital skills workshops, mentoring, and online entrepreneurship support to women in the coffee, tea, fashion and textiles sectors in Burundi, Haiti and Ethiopia in 2022 and 2023. During the reporting period, 18 workshops were held in these three target countries and at the global level, reaching over 800 participants, including women entrepreneurs, young women, public officials, civil society, the private sector, and others.

Giga – working since 2019 to connect every school to the Internet

To date, Giga has mapped 2.1 million schools in 136 countries in an open source platform that provides a real-time display of access and needs for funders, governments and service providers. Since the initiative's launch, more than 2.1 million students have been connected to the Internet in over 5 000 schools across Africa, Central Asia, Latin America and the Eastern Caribbean.

ITU and WHO partnering on Artificial Intelligence for Health

The ITU/WHO Focus Group on Artificial Intelligence for Health (FG-AI4H) worked in partnership with the World Health Organization (WHO) to establish a standardized assessment framework that evaluates AI-based methods for health, diagnosis, triage or treatment decisions. Since July 2022, the group has finalized 15 additional deliverables, and plans to finalize several more by July 2023.

In addition to the standards that the Focus Group has produced, it has been using grants (approximately CHF 600K) from Fondation Botnar to build a modular (DevSecOps) reference implementation of the standards, with a license permitting national medicine regulators and other to adapt at will. Additionally, the grants are used to fund Low- or Middle-Income Country (LMIC) expert travel.

ITU, World Meteorological Organization and UNEP are examining the potential of leveraging AI for natural disaster management

The ITU/WMO/UNEP Focus Group on AI for Natural Disaster Management held three meetings during the reporting period. Three deliverables were completed during the reporting period: 1) Technical Report - AI for Communications: Towards Natural Disaster Management; 2) Technical Report - Standardization Roadmap on Natural Disaster Management: Trends and Gaps in Standardization; and 3) Glossary - Artificial Intelligence for Natural Disaster Management.

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[2] The Enhanced Integrated Framework (EIF) is a partnership of 51 countries, 24 donors and eight partner agencies works closely with governments, development organizations and civil society to assist least developed countries (LDCs) use trade as an engine for development and poverty reduction.

An ITU /WMO/UNEP Workshop on Artificial Intelligence for Natural Disaster Management was held in Athens, Greece on 24 October 2022. An ITU webinar on "Fighting wildfires with AI-powered insights" is being organized in April 2023.

ITU and Food and Agriculture Organization cooperate closely on AI and IoT for Digital Agriculture

The ITU/FAO Focus Group on AI and IoT for Digital Agriculture held three meetings during the reporting period. The ITU/FAO Workshop on "Digital Agriculture at Scale: Sustainable Food Systems with IoT and AI" was held in Seongnam, Korea (Rep. of) on 24 August 2022.

In the context of digital agriculture, two webinars were held under the umbrella of the Digital Transformation Webinar Series, showcasing the ongoing work of FG-AI4A within this domain: February 2023 – Episode #21, Digital Agriculture: Driving Digital Transformation for Food Security (co-organized with FAO and ISO); and March 2023 – Episode #22, Digital water in smart sustainable cities (co-organized with UN-Water and WMO).

4.8   Seminars and workshops

ITU-R

WRS-22 and RRS-22

In 2022, the ITU held one World Radiocommunication Seminar 2022 and three Regional Radiocommunication Seminars: for the Arab States, Europe and Asia-Pacific. These seminars dealt with the use of radio-frequency spectrum and satellite orbits, and focused on the application of the ITU Radio Regulations. The seminars covered general radiocommunication-related matters, trends in radiocommunication services, the activities of the ITU-R Study Groups, the Radio Regulations Board, the Radiocommunication Assembly and World Radiocommunication Conference (WRC). The seminars also included Terrestrial and Space Workshops that allowed participants to get a hands-on experience of ITU notification procedures, software, databases and electronic publications. Each seminar concluded with a Forum on radiocommunication trends of particular interest for each region.

ITU-T

ITU-T held 43 non-statutory events including workshops, webinars, fora, seminars and symposiums within the reporting period – 23 of the events were organized with external entities.

These events comprised of:

- 21 fully virtual events, with a total of 2 794 attendees.
- 19 physical events with remote participation, with a total of 3 051 attendees.
- 3 fully physical events, with a total of 244 attendees.

A highlight in terms of participation was the 2nd edition of the DC[3] Conference (From Cryptocurrencies to Central Bank Digital Currencies) which took place from 24-27 January 2023. Its 11 sessions attracted 1 226 remote participants.
More information about these events can be accessed on the event webpages for the years 2023 and 2022, respectively.

ITU-D

ITU-D held 66 non-statutory events during 2022 including workshops, information sessions, symposia, seminars and fora, some of them open to a global audience, while others limited to regional participants.

Although 2022 saw a return to physical events, not all of them were physical or exclusively so. ITU-D held eight fully physical events, 15 physical events with remote participation and 43 fully virtual ones.

The above events covered all the ITU-D priorities. During the first part of 2022, they were based on the Buenos Aires Action Plan, while the Kigali Action Plan was the basis of the work after WTDC-22.

4.9   Key events

WSIS Forum

WSIS Forum 2023, held from 13-17 March under the theme *WSIS Action Lines for building back better and accelerating the achievement of the SDGs*, drew over 2 700 participants attending both onsite and remotely. Over 600 participants used the networking tool imeetyou@wsis to connect and engage with others (via LinkedIn platform). The week comprised over 250 sessions, with innovative formats that included open-space conversations, knowledge cafes and roundtable dialogues, attracting participants from existing and new communities from over 150 countries worldwide. The high-level track saw participation from 46 ministers, 50 ambassadors, and 15 mayors from countries around the world to discuss implementation of the WSIS process and its Action Lines, advancement of the SDGs, and contributions to Global Digital Compact and other global processes. The event recognized outstanding contributions in the field of ICT by awarding stakeholders for their contributions to various topics, including innovation in healthy ageing, digital service design, Generation Connect, and e-government activities. Virtual workshops will continue in April and May 2023.

ITU announced winners of the WSIS Prizes 2023 for projects linking digital transformation to sustainable development across 11 internationally recognized action lines. Of 900 submitted projects, 360 were nominated for online voting, while 18 Winners and 72 Champions were selected based on 1.5 million votes cast. Prizes were awarded on 14 March 2023 and the list of prize-winners is available on the website.

WSIS Stocktaking continues to exercise its role as a major international repository of impactful ICT practices that contribute to the development and advancement of the SDGs. So far, more than 15 000 entries have been collected since 2004, when ITU started to coordinate this segment of the WSIS process, including this year's 1 200 entries. The Global Report for 2023 is being drafted and will be published in May 2023, following the conclusion of this year's WSIS Forum.

ITU Kaleidoscope

Innovation to match the world's growing metaverse ambitions was in focus at Kaleidoscope 2022: Extended reality – How to boost quality of experience and interoperability. Hosted by the Ministry of Communications and Digitalisation, Ghana, and coordinated locally by the Ghana-India Kofi Annan Centre of Excellence in ICT, the conference took place at the National Communications Authority in Accra from 7-9 December. The programme featured four keynote sessions, an invited paper, an invited talk, three paper sessions, one video demo, and a students' exhibit.

AI for Good

AI for Good is the leading action-oriented, global and inclusive United Nations platform on AI. Its goal is to identify practical applications of AI to advance the SDGs and scale those solutions for global impact. Its work covers three streams (Learn, Build, Connect). For the complete list

of service offerings, please visit this page. These service offerings are available for all UN partners to play an active role in moving the needle towards achieving the SDGs.

AI for Good consists of an all-year online program which in 2022 broadcast over 160 webinars, and the annual in-person AI for Good Global Summit. The AI for Good Global Summit is organized by ITU together with 40 partner UN agencies and co-convened by the Government of Switzerland. The upcoming AI for Good Global Summit 2023 (6-7 July, Geneva) will bring together over 3 000 participants and online participation from the over 15 000 members of the AI for Good Neural Network, making it the world's most inclusive AI solutions and matchmaking event.

The AI for Good Neural Network, an AI-powered smart matchmaking community platform that expands on the AI for Good programme, offers content and collaboration opportunities aligned to each of the 17 SDGs. The smart, matching mechanism – designed according to the principles of the Global Initiative in AI and Data Commons – connects AI innovators to anyone with an AI-related problem, as a step towards globally scaled AI solutions. Solutions aim to stimulate unprecedented cooperation across borders and boundaries, foster impactful SDG-focused partnerships in the field of AI, and directly serve Goal 17: Revitalize the global partnership for sustainable development.

5.   Report on the implementation of PP Resolutions

A web-based platform has been created to present the implementation of PP Resolutions requesting regular reporting to Council (see here).

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