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|  | **TDAG Working Group on the future of Study Group Questions (TDAG-WG-futureSGQ)**  **5th Meeting, Virtual, 4 March 2025** | | A close up of a sign  Description automatically generated |
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|  | | **Document** **TDAG-WG-futureSGQ/28-E** | |
|  | | **26 February 2025** | |
|  | | **English only** | |
| Vice-Chair, ITU-D Study Group 1 | | | |
| [UPDATED] Compilation of Terms of Reference for ITU-D Study Group 1 Questions | | | |
|  | | | |
| **Summary:**  This document provides the revised Terms of Reference for the ITU-D Study Group 1 Questions 1/1, 2/1, 3/1, 4/1, 5/1, and 6/1 and 7/1, as shared by each of the Management Teams of the questions concerned and consolidated by the Coordinator on the referred study group for the discussion of the future of questions. The result of the consolidation is brought as input for the work of the TDAG Working Group on the future of Study Group Questions (TDAG-WG-futureSGQ).  **This is an update document which only included the ToR of ITU-D Question 4/1 on top of the contribution from the last meeting.**  **Action required:**  Participants are invited to use this document as an input for the discussions of the TDAG Working Group on the future of Study Group Questions (TDAG-WG-futureSGQ).  **References:**  WTDC Resolution 2 (Rev. Kigali, 2022) | | | |

# Introduction

ITU-D Study Group 1 held its latest meeting from November 4th to 8th, 2024, where the topic of the future of the questions was discussed in the plenaries of the study group and by each of the Rapporteur Group Questions as well.

For information, ITU-D Study Group 1 appointed Mr Hirayama (vice Chair, Brazil) as the Coordinator for the Future of Study Group Questions, and he, in that capacity, brings to the attention of this TDAG working group the discussions up to now.

The future of the questions discussions has been initiated, with one study Question having shared revised terms of reference (ITU-D Question 5/1) in the third meeting of this TDAG working group.

This document then provides the revised Terms of Reference for the ITU-D Study Group 1 Questions 1/1, 2/1, 3/1, 4/1, 6/1 and 7/1, as shared by each of the Management Teams of the questions concerned and consolidated by the Coordinator on the referred study group for the discussion of the future of questions. The result of the consolidation is brought as input for the work of the TDAG Working Group on the future of Study Group Questions (TDAG-WG-futureSGQ).

# Revised Terms of Reference of study for ITU-D Study Group 1 Questions 1/1, 2/1, 3/1, 4/1, 6/1 and 7/1

**Study Period 2026 -2029**

**QUESTION 1/1 - Strategies and policies for the deployment of broadband in developing countries** **including urban, rural, and remote areas**

**1. Statement of the situation or problem**

Broadband technologies are fundamentally transforming the way we live. Broadband infrastructure, applications and services offer important opportunities for boosting eco­nomic growth, enhancing communications, improving energy efficiency, safeguarding the planet and improving people's lives.

Broadband access has had a significant impact on the world economy.

Rapid evolution and new business opportunities are driving rapid but uneven growth in digital technologies.1

1) ITU Statistics. <https://datahub.itu.int/> According to ITU data, 2024 marked the first full year when more than 70% of the world begun to participate in the global digital economy by logging onto the Internet. The latest ITU data show that some 30 per cent of the world's population currently remain unconnected (ITU, 2024 estimates).2

2) ITU/UNESCO Broadband Commission for Sustainable Development. The State of Broadband: Broadband as a Foundation for Sustainable Development (September 2019). <https://www.itu.int/dms_pub/itu-s/opb/pol/S-POL-BROADBAND.20-2019-PDF-E.pdf>

In order to continue to contribute to achieving the objectives set by the Geneva Plan of Action of the World Summit on the Information Society (WSIS) in the era of digital transformation, and to promote attainment of the United Nations Sustainable Development Goals (SDGs) set in September 2015, it is necessary to address the challenge of digital infrastructure development to make available the benefits of various e-services (e-education, e-health, e-government, e-agriculture, e-commerce, etc.) in the rural and remote areas of developing countries1 , including least developed countries (LDCs), landlocked developing countries (LLDCs) and small island developing states (SIDS), where more than half of the world's population live and people need broadband connectivity in general, including terrestrial and non-terrestrial high-speed and high-quality broadband network technologies that support the most common broadband applications required by citizens for digital equity and attainment of the SDGs.

Considering that the deployment of cost-effective and sustainable digital infrastructure, through the deployment of emerging technologies such as next-generation high-speed mobile terrestrial and non-terrestrial networks and fixed-broadband wireline and wireless transmission systems suited for rural and remote areas, is an important aspect calling for further studies, and specific outcomes need to be available for the vendor community to make available broadband Internet connectivity to support up-to-date e-services for the quality of life of inhabitants in rural and remote areas.

It is also important to consider broadband demand creation and affordability programmes for the adoption of broadband and e-services by people in rural and remote areas, who need affordable broadband and devices for access to the Internet. Government incentives, subsidies and other financing mechanisms are necessary. Work on the effective use of universal service funds and best practices is also crucial.

The Question has to continue for the next study period, and the topics of interest to be reflected in the next study period under the overall theme of strategies and policies for the deployment of broadband in developing countries including urban, rural, and remote areas 5

3) These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition

**2. Question or issue for study**

**2.1 Continuing topics from previous study period**

1) Policies and regulations that promote increased high-speed, high-quality broadband network connectivity in developing countries, considering trends in the various broadband access technologies, barriers for infrastructure deployment and investment, best practices on cross-border connectivity and challenges for small island developing states.

2) Effective and efficient ways to fund increased broadband access for the unserved and underserved populations in non-rural or urban areas.

4) Promoting incentives and an enabling regulatory environment for the investments required to meet the growing demand for access to the Internet generally, and bandwidth and infrastructure requirements in particular, for delivering affordable broadband services to meet development needs, including consideration of public, private and public-private partnerships for investment.

5) Methods and strategies influencing the effective deployment of wireline and wireless, including satellite, broadband access technologies, including backhaul considerations, for unserved and underserved populations in urban, rural, and remote areas.

6) Methodologies for the planning and implementation of migration to broadband technologies, taking into account existing networks, as appropriate.

7) National digital policies, strategies and plans which seek to ensure that broadband is available to as wide a community of users as possible.

8) Flexible, transparent approaches to promoting robust competition in the provision of network access (in possible collaboration with Question 4/1).

9) Licensing approaches and business models for promoting broadband network expansion that more effectively integrate the use of terrestrial, satellite, backhaul and submarine telecommunication infrastructure (in possible collaboration with Questions 4/1).

10) Co-investment, co-location, Co-deployment, and sharing of broadband infrastructure with other infrastructure networks (in possible collaboration with Question 4/1).

**2.2 New topics for this study period**

1) Sustainable solutions that can impact on the provision of telecommunications/ICTs and the availability of broadband digital infrastructure in rural and remote areas, with emphasis on those that employ up-to-date technologies designed to lower infrastructure capital and operating costs and support convergence between services and applications.

2) Challenges in creating or building broadband digital infrastructure in rural and remote areas, and innovative solutions to deliver high-speed broadband connectivity.

3) Business models for sustainable deployment of networks and services in rural and remote areas, Pricing models and affordability strategies for satellite-based broadband, taking into consideration priorities based on economic and social indicators (in possible collaboration with Question 4/1).

4) Innovative PPP models for financing infrastructure deployment and service delivery, Blended financing mechanisms and incentives, including multilateral development banks, relevant international organizations and other private sector.

5)Increasing availability of telecommunications/ICTs that provide enhanced connectivity at progressively lower costs, affordability programs for low-income households, device costs are feasible for the population.

6) Encouragement of the development of new Internet applications and digital solutions for the socio-economic development of rural and remote areas, and promotion of innovation and digital transformation for rural and remote areas, including localization of content for rural and remote people. (in possible collaboration with Question 5/2).

7) Renewable energy sources and energy-efficient technologies for powering network infrastructure.

**QUESTION 2/1 - Strategies, policies, regulations for the adoption of digital technologies for broadcasting, including new digital audiovisual services and applications**

1. **Statement of the situation or problem**
   1. The migration to digital broadcasting technologies has been completed in some countries, while others are in the process of completing the transition. The Final Reports of last study periods indicate that the transition results in a variety of strategies, plans and implementation actions that achieve a successful process to maximize the benefits.
   2. The ITU Telecommunication Development Sector (ITU-D) can continue playing a role in helping Member States evaluate the technical and economic issues involved in the adoption and implementation of digital technologies and services. On these matters, ITU-D has been collaborating closely with both the ITU Radiocommunication (ITU-R) and the ITU Telecommunication Standardization Sector (ITU-T), thus avoiding duplication.
   3. ITU had been working to analyse and identify best practices for the adoption and implementation of digital broadcasting, including new and innovative systems.
   4. In this context, the reports from the last study periods presented best practices that accelerate the transition and narrow the digital divide by deploying new services, communication strategies for public awareness on digital broadcasting, and radio spectrum issues related to the analogue switch-off process, among other case studies.
   5. It is also important to acknowledge the relationship between different environments, notably broadcasting and broadband, and the necessity to treat broadcasting in a more general manner and consider the relationship among the various networks which deliver audiovisual content. As well as, the adoption and implementation of new and innovative broadcasting services and applications.
   6. Moreover, the broadcasting arena is changing and the offers to users are evolving. New experiences in accessing audiovisual content are being provided, and one of the consequences of these new offers is that users no longer have only the traditional media services/applications. They are instead starting to experience different ways of watching audiovisual content in their broadcasting services. It is important, in this context, to analyze other digital audiovisual service offers, and new and emerging broadcasting/audiovisual content distribution systems, services, and applications, including OTTs and other distribution platforms, such as satellite and cable networks, to assess the television landscape.
   7. Therefore, to implement new broadcasting technologies, services and applications in this new environment, which seems to be heading towards a global media strategy for service providers and not restricting the service offers to the traditional broadcasting market, it seems that consolidation, co-investment and infrastructure sharing are key trends to reduce costs and allow massive investments in network deployment and content delivery.
   8. Bearing that in mind, it is beneficial to study broadcasting as a key infrastructure for delivering innovative applications and services when combined with other networks and service platforms. Additionally, it is important to consider these interactions from the regulatory, economic and technical points of view, so as to leverage the strengths of each network for the benefit of the users and to make available a more diverse range of services.
   9. There have been developments of broadcasting systems using IP throughout the broadcasting chain, including the production, contribution and transmission parts, and these developments of IP-based technologies in these parts are progressing quite quickly.
   10. Taking into account possible innovations for broadcasting in the UHF band, proposed by new systems like 5G Broadcast, ATSC3.0 and the expected new Brazilian second-generation system, and also with the use of VHF Band III for DAB or DTT, this could lead to new forms of broadcasting services and applications.
   11. The use of the "digital dividend" is an important issue, and continues to be widely debated by broadcasters and operators of telecommunication and other services operating in the same frequency bands. The role of the regulatory authorities in this regard is crucial to balancing the interests of users with the demands of growth in all branches of the industry. Furthermore, it appears that the availability of the digital dividend and its effective usage, for example, to bridge the digital divide and to provide new innovative broadcasting applications and services, is still a priority that needs to be addressed.
   12. Other issues to consider are the studies from other ITU Sectors, especially taking into account the decisions of the World Radiocommunication Conferences on exploiting the digital dividend in the future. In this regard, it is relevant to consider maintaining study topics related to technical and economic aspects involved in the transition from analogue to digital broadcasting.
   13. Finally, another important issue for the future of broadcasting is the emergence of new broadcasting technologies and standards that could be taken into account when developing countries[[1]](#footnote-2) are implementing the digital television transition. At the same time, traditional broadcasting services, with or without the interaction with other platforms and networks, should also be considered.

# Question or issue for study

The focus of the Question’s items of study will be on new and emerging broadcasting/audiovisual content distribution systems, services, and applications, including OTTs and other distribution platforms, such as satellite and cable networks, and new topics targeted at new deliverables for the ITU-D study period 2026-2029, as appropriate.

Aggregate study of spectrum planning, digital broadcasting and the usage of the digital dividend, to cover new topics and interests from developing countries will continue.

Studies under the Question will focus on the following issues:

**2.1 Continuing topics to consider from Question 2/1 of 2022-2025 study period**

* 1. Analysis of methods and issues for the adoption and implementation of digital broadcasting (sound and television), including the deployment of new services and applications, such as UHDTV, AR/VR, interactive applications, for consumers/viewers in various environments (in possible collaboration with Question 2/2).
  2. Analysis of the effects for public broadcasting services in the developing countries of the rapid growth of traditional and online linear TV and video-on-demand subscription services.
  3. National experiences on strategies for the introduction of new broadcasting technologies, applications, emerging services and capabilities, including regulatory, economic, financial and technical aspects, reflecting the need for massive costs of the implementation and investments to cope with the ever-growing demand for video content (in possible collaboration with Question 2/2 and Question 4/1, where appropriate).
  4. Analysis of the development of broadcasting systems using IP-based technologies throughout the broadcasting chain, including the production, contribution and transmission parts.
  5. Best practices and national experiences on spectrum-planning, including interference mitigation, the use of the digital dividend technical, regulatory and economic aspects, and other related spectrum management matters.
  6. Analysis of the gradual transition to digital sound broadcasting, study cases, sharing of experiences and strategies implemented, including the use of VHF Band III for DAB or DTT.
  7. Analysis of possible innovations for broadcasting in the UHF band, proposed by new systems for broadcasting, such as 5G Broadcast, ATSC3.0 and other next-generation systems.

**2.2 New topics for this study period**

1. Analysis of strategies, policies and regulation for the adoption and implementation of digital audiovisual services, in the context of audiovisual content distribution;
2. Evaluation of new broadcasting services and technologies, emerging applications and capabilities, including regulatory, economic and technical aspects, both in traditional and other distribution platforms, including through IP;
3. Assessment of Next generation broadcasting and audiovisual content distribution systems, including IP-based technologies;
4. Analysis of the deployment strategies of new services and applications for audiovisual content distribution platforms, such as UHDTV, AR/VR, interactive applications, metaverse, among others;
5. Evaluation of other digital audiovisual service offers, and new and emerging broadcasting/audiovisual content distribution systems, services, and applications, including OTTs and other distribution platforms, such as satellite and cable networks, to assess the television landscape.

# Expected output

1. A report reflecting the studies outlined in 2.1 and 2.2 above, and possible revisions to the Report of the previous study period, as appropriate.
2. Periodic dissemination of relevant data emanating from the organizations and groups listed in § 7 below. Periodic updates on studies taking place in the other ITU Sectors.
3. National experiences on strategies and socio-economic aspects of the introduction of new broadcasting technologies, services and capabilities.

# Timing

An annual progress report is expected at each study group meeting. Other deliverables, including annual deliverables and the revision of the report of the previous study period, sent for study group's approval on readiness, as appropriate.

# Proposers/sponsors

TBD.

# Sources of input

1. Collection of related contributions and data from Member States and ITU-D Sector Members, and those organizations and groups listed in § 9 below.
2. Updates and outputs of ITU-R and ITU-T study groups; relevant Recommendations and reports related to digital broadcasting.
3. Collection of information on the impact on developing countries of transition to digital broadcasting, re-planning and interactivity, and to the implementation of video-centric service providers across various environments.
4. Outputs of WTDC Resolution 9 (Rev. Buenos Aires, 2017), including relevant Recommendations, guidelines and reports.

# Target audience

|  |  |  |
| --- | --- | --- |
| **Target audience** | **Developed countries** | **Developing countries** |
| Telecom policy-makers | Yes | Yes |
| Telecom regulators | Yes | Yes |
| Service providers/operators | Yes | Yes |
| Broadcasting operators | Yes | Yes |
| ITU-D programme | Yes | Yes |

## Target audience – Who specifically will use the output

Beneficiaries of the output are expected to be middle and higher-level managers in broadcasters, telecommunication/ICT operators and regulators worldwide.

## Proposed methods for implementation of the results

Activities include conducting technical studies, observing best practices, and developing comprehensive reports serving the target audience's interests.

# Proposed methods of handling the Question or issue

## a) How?

|  |  |  |
| --- | --- | --- |
| 1) | Within a study group:  – Question (over a multi-year study period) | ☑ |
| 2) | Within regular BDT activity (indicate which programmes, activities, |  |
|  | projects, etc., will be involved in the work of the study Question): |  |
|  | – Programmes | ☑ |
|  | – Projects | ☑ |
|  | – Expert consultants | ☑ |
|  | – Regional offices | ☑ |
| 3) | In other ways – describe (e.g., regional, within other organizations with expertise, jointly with other organizations, etc.) | □ |
| **b)** | **Why?** |  |

To be defined in the workplan.

# Coordination and collaboration

The ITU-D study group dealing with this Question should coordinate closely with:

* Other ITU-R and ITU-T study groups dealing with similar issues, and in particular other relevant ITU-D groups, for example the ITU-D Working Group on Gender Issues;
* The Technical Committee of the Inter-Regional Broadcasting Union;
* UNESCO and relevant international and regional broadcasting organizations, as appropriate;
* The Director of the Telecommunication Development Bureau (BDT) shall, through the appropriate BDT staff (e.g. regional directors, focal points) provide information to rapporteurs on all relevant ITU projects in different regions. This information should be provided to the meetings of the rapporteurs when the work of the programmes and regional offices is in the planning stages and when it is completed.

It is worth mentioning that it is beneficial to the membership that collaboration be incentivised with other Questions and ITU sectors in the investigation of other networks and service platforms which can be combined with broadcasting to implement new experiences in content delivery, for instance, in ITU-D Questions 1/1, 4/1 and 2/2; ITU-R SG1, SG5 and SG6; and ITU-T SG21, each of the groups in their mandates and within their scopes of work.

# BDT programme link

WTDC Resolutions 10 (Rev. Hyderabad, 2010), Resolution 9 (Rev. Buenos Aires, 2017), Resolution 17 (Rev. Buenos Aires, 2017) and Resolution 33 (Rev. Dubai, 2014)

Links to BDT programmes aimed at fostering the development of telecommunication/ICT networks as well as relevant applications and services, including bridging the standardization gap.

# Other relevant information

As may become apparent within the life of the Question.

**QUESTION 3/1 - The use of telecommunications/ICTs for disaster risk reduction and management**

**1. Statement of the situation or problem**

The importance of telecommunications and ICTs to support disaster mitigation, preparedness, response and recovery is well established. Over the study period from 2022 to 2025, under Question 3/1 ITU-D Study Group 1 examined the use of ICTs in disaster risk reduction with case studies, examples of technologies, applications and planning for ICT resilience for disaster management . Before that, during the study period 2018-2021, the focus had been on the utilization of telecommunications/ICTs for disaster preparedness, mitigation and response' with focus on drills and exercise.

Disasters—ranging from earthquakes and hurricanes to floods and droughts—claim approximately 40,000 to 50,000 lives each year, on average, over the last few decades. In 2023, the Emergency Events Database (EM-DAT) recorded 399 disasters related to natural hazards. These events resulted in 86,473 fatalities and affected 93.1 million people. The economic losses from these disasters amounted to US$202.7 billion. The most catastrophic event of the year was the earthquake in Türkiye and the Syrian Arab Republic, which caused 56,683 deaths and US$42.9 billion in damages. This earthquake impacted an estimated 18 million people, making it the second most impactful event in terms of affected individuals, following the 2023 Indonesian drought, which affected 18.8 million people between June and September.

While these figures represent a relatively small fraction of global deaths, disasters can have disproportionately large impacts on specific populations. Extreme events can kill tens to hundreds of thousands of people in a single instance. In the 20th century, it was not uncommon for disasters to claim over a million lives annually.

Beyond loss of life, disasters also lead to significant displacement, with millions of people left homeless each year. The economic costs of such events can be severe and difficult to recover from, particularly in lower-income countries.

However, we are not helpless in the face of disasters. The number of deaths from disasters has significantly decreased over the last century, thanks to early warning systems, better infrastructure, improved agricultural productivity, and more coordinated responses.

As climate change increases the frequency and severity of extreme events, strengthening resilience will be critical to prevent reversing our recent progress. To achieve this, we must continue working towards enhancing resilience in vulnerable countries, leveraging Information and Communication Technologies (ICTs) and other strategies to reduce the vulnerability of populations and ensure that no one at risk is left behind.

Most developed and developing countries recognize emergency tele communications as a priority and are taking steps to:

* build national emergency telecommunication plans;
* develop and implement early warning systems; and
* test that technologies and systems are in place and ready to be used to ensure disaster-resilience.

Based on the past three years' experience, it is felt that during the next phase of study the focus should be on preparing : checklists; guidance on how to prepare standard operating procedures as well as best practices for countries to use to create resiliency in disaster response and recovery.

In view of the above, the focus of the study Question for the year 2026-202X should remain: ''The use of Telecommunications/ICTs for disaster response and recovery''.

**2.Question or issue for study**

1) Continue examination of terrestrial, space based and integrated telecommunications/ICTs to assist affected countries in utilizing relevant applications for disaster prediction, detection, monitoring, early warning, response, relief and recovery, including consideration of best practices/guidelines for implementation, and in ensuring a favourable regulatory environment to enable rapid deployment and implementation.

2) Continue gathering and examining national experiences and case studies in the use of telecommunications/ICTs for disaster preparedness, mitigation, response and recovery, including response to pandemics, and analysing lessons learned and common themes between them.

3) Examine the role that administrations and Sector Members and other expert organizations and stakeholders share in collaboratively addressing disaster management and the effective use of telecommunications/ICTs, particularly in the areas of planning for ICT resilience for disaster management.

4) Examine the enabling environment for more resilient communication networks and for the deployment of emergency communication systems and the latest digital communication technologies, which includes, but is not limited to, emergency preparedness, response and recovery.

5) Collect case studies and best practices to ensure the inclusion of vulnerable groups such as persons with disabilities, women and youth for the use of ICTs for disaster management and risk reduction.

6) Gather national experiences and case studies and develop best practices for the elaboration, implementation and refinement of national and regional disaster-management plans or frameworks for the use of telecommunications/ ICTs in disaster and/or emergency situations, including pandemics, working in coordination with the relevant BDT programmes, regional offices and other partners. This would include a guide for countries to develop standard operating procedures, and for the development and implementation of National Emergency Telecommunication Plans as well as early warning systems.

**QUESTION 4/1 - Economic aspects of national telecommunications/ICTs**

**1 Statement of the situation or problem**

As recognized in the Final Reports on study Question 4/1, consideration of economic aspects of national telecommunications/ICTs continues to be important.

With the emergence of new types of telecommunication enterprise, such as MVNOs, tower companies and capacity wholesale operators, and the convergence of traditional telecom businesses, regulators and operators are having to adapt their policies and strategies to this new digital reality. Finding suitable authorizations, cost models and business models and using relevant policy and regulatory tools such as infrastructure-sharing should be considered by NRAs in order to help their national markets thrive, as shown in contributions received from NRAs, policy-makers and operators alike which have been considered by the Rapporteur Group for Question 4/1 in the current study period.

At the same time, further global forces pushing towards increased digitalization, as well as national economic and global emergencies like the COVID-19 pandemic, are throwing up many new relevant issues that call for additional study and investigation in the next ITU-D study period.

Expansion of the number of topics follows the need to divide up the work on Final Reports of Question 4/1. Thus, the topics which will continue from the ITU-D study period 2018-2021 could be reviewed in the scope of revision of the Question 4/1 Final Report for that study period, whereas new topics could be considered under the new Question 4/1 Final Report for 2022-2025 study period.

Thus, the work programme set out below to guide the activities related to Question 4/1 should cover:

– identification of active collaborators;

– expected outputs of the Question;

– working methods; and

– work programme.

**2 Question or issue for study**

**2.1 Continuing topics from ITU-D study period 2018-2021**

The Question will continue to cover the following main topics from national perspectives in the scope of possible revision of the Question 4/1 Final Report for ITU-D study period 2018-2021:

1) New charging methods (or models, if applicable) for services provided over NGN networks, including cost-modelling methods:

2) The impact of infrastructure-sharing (local loop unbundling, tower companies, etc.) on investment cost, provision of telecommunication/ICT services, competition and prices to consumers: case studies with quantitative analysis.

3) Consumer price and tariffs evolution and impact on ICT service usage, innovation, investment and operator revenues:

4) Trends in the development of virtual mobile operators and their regulatory framework.

**2.2 Continuing topics from ITU-D study period 2022-2025**

The Question will continue to cover the following main topics from national perspectives in the scope of possible revision of the Question 4/1 Final Report for ITU-D study period 2022-2025:

1) Impact of new converging ICTs on cost-modelling strategies traditionally carried out by stakeholders constituting the ICT networked value chain (e.g. telecom operators, over-the-top, digital service providers, etc.) (in possible collaboration with Question 2/2):

1.1) The role and design of new tariffs for convergent networks/services (e.g. bundling).

1.2) The role and impact of tower companies as new entrants for a converging telecommunication/ICT market.

2) The role and impact on achieving the SDGs of new types and modes of investment in telecommunications/ICTs, e.g. blended investment and crowdfunding.

3) Analysis of case studies on the economic contribution of telecommunication/ICT services to the national economy and country’s GDP.

4) Economic incentives and mechanisms for bridging the digital divide to provide accessible and affordable access.

5) Analysis of the economic impact of the COVID-19 pandemic.

6) Economic aspects/implications of digital transformation.

7) The economic value of usage of personal data (in possible collaboration with Question 6/1 and Question 3/2).

8) Impact on innovation and productivity and other national economic aspects of digital financial inclusion.

**3**

69

1) Digital currencies.

2) Economic aspects of Ai and Metaverse.

3) Digital taxes.

4) National aspects of spectrum economics.

5) Social return of investment

**3 Expected output**

* Revision of the Final Report for Question 4/1 for the ITU-D study period 2018-2021 on the topics set out in Section 2.1, as appropriate.
* Revision of the Final Report for Question 4/1 for the ITU-D study period 2022-2025 on the topics set out in Section 2.2, as appropriate
* Revision of the Question 4/1 Guidelines on cost modelling, as appropriate.
* New Question 4/1 Guidelines on topics set in 2.1-2.3, as appropriate.
* Final Report for new Question 4/1 and other deliverables for the ITU-D study period 2026-2029, covering one/some/all of proposed new topics set out in Section 2.3.
* Joint deliverables with other ITU-D Questions on the topics of mutual interest, as appropriate.
* Inputs for ITU Regional Economic Dialogues, as appropriate.
* Inputs for ITU Tariff Policies Survey, as appropriate.

**4 Timing**

Annual progress reports will be presented to Study Group 1 in 2027, 2028 and 2029. Deliverables set in Section 3 could be sent for Study Group 1 for approval on readiness without waiting for the end of study period.

**5 Proposers/sponsors**

ITU Telecommunication Development Sector (ITU-D) Study Group 1 proposed the continuation of this Question as modified herein.

**6 Sources of input**

The major source of input will be the experiences of Member States and Sector Members on economic aspects on national telecommunications/ICT. Contributions from Member States and Sector Members will be essential to the successful study of the issue.

Interviews, existing reports, materials from relevant ITU events, particularly, ITU Regional Economic Dialogues, and surveys should also be used to gather data and information for expected outputs of Question. Material from regional telecommunication organizations, telecommunication research centres, manufacturers and working groups should also be used, in order to avoid duplication of work.

Contributions are expected from Member States, Sector Members, Associates and Academia, ITUD study groups and from relevant ITU Radiocommunication Sector (ITU-R) and ITU Telecommunication Standardization Sector (ITU-T) study groups and working parties, in particular ITU-T Study Group 3 and ITU-R Working party 1B and other stakeholders.

**7 Target audience**

All the target audiences mentioned below, with particular attention to the needs of developing countries[[2]](#footnote-4).

Table

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a) Target audience – Who specifically will use the output

All national telecom policy-makers, regulators, service providers and operators, especially those in developing countries, as well as regional and international organizations.

b) Proposed methods for implementation of the results

The results of the Question are to be distributed through ITU-D interim, including through ITU regional offices, final reports and other relevant deliverables. This will provide a means for the audience to have periodic updates of the work carried out and to provide input and/or seek clarification/more information from ITU-D Study Group 1 should they need it.

**8 Proposed methods of handling the Question or issue**

Electronic distribution of the reports and guidelines to all Member States, Sector Members and their respective national regulatory agencies (NRAs), and ITU regional offices.

These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition.

Distribution of the report and guidelines at the Global Symposium for Regulators (GSR), ITU Regional Economic Dialogues and relevant Telecommunication Development Bureau (BDT), Radiocommunication Bureau (BR) and Telecommunication Standardization Bureau (TSB) seminars.

**How?**

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**9 Coordination and collaboration**

The ITU-D study group dealing with this Question will need to coordinate with:

* Relevant ITU-D study group Questions, particularly Question 1/1 and Question 3/1.
* Relevant ITU-T study groups, particularly Study Group 3 and its regional groups for Africa (SG3RG-AFR), Asia and Oceania (SG3RG-AO), Arab Region (SG3RG-ARB), Latin America and the Caribbean (SG3RG-LAC) and Eastern Europe, Central Asia and Transcaucasia (SG3RG-EECAT.
* Relevant ITU-R study groups and working parties, particularly Working party 1B.
* Relevant focal points in BDT and ITU regional offices.
* Experts and experienced organizations in this field.

**10 BDT programme link**

ITU-D Objectives 3 and 4.

**11 Other relevant information**

As may become apparent within the lifetime of this Question.

**QUESTION 6/1 Consumer information, protection and rights**

**1. Statement of the situation or problem**

1.1 Emerging telecommunications and ICT technologies have enabled a paradigm shift in how people live, work, and interact, resulting in new opportunities for digital engagement, empowerment, socio-economic growth, and improved consumer experiences. The development of artificial intelligence (AI) technologies promises to be a key enabler for telecommunications and ICTs to contribute to universal sustainable digital connectivity and achieving SDGs. Developing nations, in particular, stand to benefit from digital transformation.

1.2 However, these new opportunities are accompanied by novel challenges. These include fostering and maintaining consumer trust in digital services despite the possibility of being harmed online, including through the misuse of personally identifiable information (PII). Given the increasing sophistication of misinformation, disinformation, and online scams perpetuated over telecommunications/ICT, protecting consumers requires a renewed focus and a more holistic and collaborative approach than what is currently in place.

1.3 The digital revolution has shaped global awareness of consumer rights, making consumer information, awareness, and rights highly relevant to the ITU’s mission. On the one hand, digital transformation has created new types of rights and, on the other hand, is influencing the nature and implementation of traditional consumer rights revolving around price, quality, and safety. This interaction is complex and constantly evolving with global and borderless technological advancements, requiring ongoing international cooperation and collaboration.

1.4 Regulators in developing countries face the dual pressure of ensuring universal access expeditiously bringing unconnected populations online and protecting consumers by promoting their trust in applications deployed to enable much-needed digital transformation. By facilitating the sharing of perspectives, challenges and solutions under the aegis of Q 6/1, developing countries will benefit from learning from the experience and regulatory innovations of the developed world to leapfrog towards meaningful connectivity while minimising consumer harm. In turn, developing countries' perspectives can inform the trajectory of inclusive and equitable digital transformation for all.

1.5 Consumer vulnerabilities can arise when individuals face barriers or challenges that limit their ability to make informed decisions about accessing ICTs safely. These vulnerabilities may stem from personal circumstances, societal inequalities, or systemic factors. They can also result from insufficient measures to empower consumers, including through appropriate levels of information and transparency. Consumer vulnerabilities can manifest as unequal access to services, falling prey to exploitative practices, or difficulty resolving disputes. Regardless, they can threaten global efforts towards early and sustained digital transformation.

1.6 Addressing consumer vulnerabilities and focusing on consumer information, awareness, and rights is critical to ensuring that all individuals can exercise their rights to participate effectively and meaningfully in the digital world and benefit from technological advances. Thus, ensuring informed decision-making by increasing awareness, encouraging transparency, and respecting consumer rights and interests are critical pillars for fostering trust and sustainability in ICTs in the digital era. Given the global and pervasive nature of telecommunications/ICTs, this requires multi-stakeholder cooperation, cross-border capacity building, and collaboration.

1.7 With the increasing deployment of AI in ICTs, biases and discrimination can arise inadvertently from the unequal representation of various segments of the global human population in the data used to train AI and in AI governance, including the decision-making surrounding its design and deployment. Consumers in developing countries may be particularly vulnerable in this regard, as are rural populations, persons with disabilities and women. Involving marginalised groups in regulatory and governance decisions is therefore important. The Question will provide a forum to promote a more participative discussion and discuss how to encourage broader participation.

1.8 Safeguarding PII means informing consumers on the need for them to be aware and exercise due diligence while sharing their information online. It also involves the right regulatory incentives to minimise the misuse of PII. Effective PII protection measures represent a commitment to strengthening consumer trust. When organisations are transparent about PII processing activities, consumers feel more confident sharing their information for individual and societal good. The regulation and supervision of consumer protection require a renewed focus on processing PII carefully and not harming consumers. Industry best practices will be encouraged and shared during the study period to address PII use, storage, processing transfer, etc.

1.9 Consumers can make informed decisions by accessing clear, accurate, and complete information about the terms and conditions of ICT services and their rights and obligations. As technology evolves, the need for robust protections and clear communication among stakeholders will increase.

**2. Questions or issues for study**

2.1 The question will continue the work of previous study periods and cover existing consumer protection issues, given that different member states are at various stages of adopting ICTs and digital transformation. The Question will also cover new topics in the scope that align with new resolutions approved in the last ITU Plenipotentiary Conference and WTSA 2024, such as those about AI, metaverse, and meaningful and sustainable digital transformation. The overarching theme for this Question would be meaningful and sustainable digital transformation based on consumer trust and safety. The goal is that availability, accessibility, and affordability must be supported by consumer information and awareness measures for connectivity to achieve the SDGs effectively. In this study period, the emphasis will be on sharing consumer protection challenges faced universally and those faced by developing countries in particular and on experience sharing between members to find solutions towards promoting consumer information awareness and rights.

* 1. In particular, studies under the Question will focus on the issues set out below:

2.2.1 Enhancing traditional responses and updating the traditional regulators’ toolkit in the digital age. This would include measures that promote innovation, competition and consumer safety, as well as methods and tools to protect consumers from unsolicited commercial communications, online fraud, and the misuse of personally identifiable information as an integral part of telecommunication/ICT policy.

2.2.2 Innovative means and best practices for providing consumers with the requisite information, awareness and skills to become more aware of and resistant to potentially harmful and deceptive practices. This would include measures undertaken by service providers, regulators, and consumer organisations. Sharing challenges and solutions between less and more experienced jurisdictions would help the global population leapfrog towards fulfilling the SGDs by benefitting from faster uptake of connectivity and advanced digital products and services.

2.2.3 Protection of vulnerable consumers: The large online data flows tend to exacerbate the information asymmetries between suppliers and consumers. Therefore, a key question is how to rebalance this dynamic by enhancing transparency while leveraging data to protect consumers. Data can also be used to identify vulnerable consumer segments such as older people, PwDs, women, and children and provide them with tailored support. The question’s focus in this study period will include how to gather and use consumer behavioural insights to help regulators collaboratively:

2.2.3.1. Understand consumer decision-making and design better regulations to inform and protect them in the digital age.

2.2.3.2. Engage with service providers to collaborate on consumer information, awareness and safety by design, keeping in view the needs of the most vulnerable consumers.

2.2.4. The question would deliberate on how we can identify unique requirements of skilling aimed at consumer awareness and safety in using ICT services enabled by the age of new and emerging technologies, including the unique requirements of developing countries and marginalised groups of consumers. This would include how to:

2.2.4.1 Educate consumers about their rights and how to navigate risks in the digital era.

2.2.4.2. Enhance the focus on PwDs, children, women, and the elderly to foster trust in ICTs, keep them safe online, and help them engage effectively with the digital world.

2.2.4.3. Promote more balanced and beneficial digital transformation outcomes for women as a consumer group, including strengthening women’s participation and unique contributions to the global governance of emerging technologies.

3. The question would deliberate on how, given the global nature of digital transformation and online harms, we can cooperate effectively to protect consumer rights worldwide, even as we move to benefit from digital transformation expeditiously. Can we identify common best practices and principles? To this end, the study period will be used to create a toolkit on better regulatory design for consumer protection in the digital age and create awareness based on members' experiences and workshops as the main deliverable besides the report.

3.1*.* Recommendations would be based on evidence, including the impact of good regulation (that protects consumers as a complement to digital connectivity initiatives) on enhancing the take-up of digital transformation initiatives. For example, the success of digital public infrastructure is based on good regulations that foster consumer trust, apart from excellent technological design*.*

3.2The study period would help Q 6/1 focus on experience sharing and capacity building to enable regulators to assess and mitigate any potential adverse impact of new and emerging technologies like generative AI on safety in consumers' online experience from the viewpoint of helping retain their trust in digital connectivity and wholeheartedly adopt digital transformation including:

3.2.1*.* The manner and extent regulators foster a collaborative approach to consumer protection, education and empowerment, i.e. with other regulators, consumer organisations, civil society, etc. What are the best practices they apply?

3.2.2 What are the best practices of multi-stakeholder cooperation, including industry self-regulation and co-regulation?

3.2.3. How can regulators leverage research and regulatory impact assessment to enhance consumer protection and education mechanisms, programmes and initiatives?

3.2.4. How do regulators and service providers leverage emerging technologies to enhance consumer protection mechanisms and empower consumers?

3.2.5 How can regulators and industry provide consumers with the requisite information and teach consumers to protect their PII from misuse?

1. **Expected output**

The output will be a report on the results of the work conducted for each item studied, together with a handbook, case study analysis reports, recommendations and other relevant materials at appropriate times, either during the cycle or after it. Information shall be consolidated and disseminated to the membership to enable them to organise seminars and workshops to share best practices on the digital deployment of broadband infrastructure in rural and underserved areas.

1. **Timing**

The output will be generated annually. The output from the first year will be analysed and assessed to update the work plan for the next year, and so on.

1. **Proposers/sponsors**

The Question was originally approved by WTDC-94, and subsequently revised by WTDC-98, WTDC- 02, WTDC-06, WTDC-10, WTDC-14 and WTDC-17.

1. **Sources of input**

Contributions are expected from Member States, Sector Members, Academia and Associates, and inputs from relevant Telecommunication Development Bureau (BDT) programmes, particularly those that have successfully implemented solutions that promote consumer information awareness and rights. These contributions will enable those working on this Question to develop the most appropriate conclusions, recommendations and outputs. The intensive use of correspondence and online exchange of information, workshops and field experiences is encouraged for additional sources of inputs.

1. **Target audience**

|  |  |  |
| --- | --- | --- |
| **Target audience** | **Developed countries** | **Developing countries** |
| Relevant policy-makers | Yes | Yes |
| Telecom regulators | Yes | Yes |
| Sector/Economic Regulators | Yes | Yes |
| Service providers/operators | Yes | Yes |
| Manufacturers, including software developers | Yes | Yes |
| Vendors | Yes | Yes |
| Civil Society | Yes | Yes |
| Academia | Yes | Yes |

1. **Proposed methods of handling the Question**

Within ITU-D Study Group 1.

1. **Coordination**

The ITU-D study group dealing with this Question will need to coordinate with:

* Focal points of the relevant Questions in BDT
* Coordinators of relevant project and programme activities in BDT
* Regional and scientific organisations with mandates covering the subject matter of the Question
* Other relevant stakeholders (see Recommendation ITU-D 20). As may become apparent within the life of the Question.

1. **BDT programme link**

WTDC Resolution 11 (Rev. Buenos Aires, 2017), Resolution 68 (Rev. Dubai, 2014) and Recommendation ITU-D 19.

Links to BDT programmes aimed at fostering the development of telecommunication/ICT networks as well as relevant applications and services, including bridging the standardization gap.

1. **Other relevant information**

As may become apparent within the life of the Question.

**QUESTION 7/1 Telecommunication/ICT accessibility to enable inclusive communication, especially for persons with disabilities**

**Proposed new title in the future study period as follows:**

**Version 1: Telecommunication/ICT accessibility to enable inclusive communication**

**Version 2: ICT accessibility for inclusive digital ecosystem**

**1. Statement of the situation or problem**

ICT/digital accessibility enables digital inclusion and ensures inclusive communication for all people – regardless of their gender, age, ability, or location[[3]](#footnote-5). ICT accessibility enables communication for everyone and is key to supporting the independent living of persons with disabilities and persons with specific needs in the digital ecosystem.

By championing universally designed technologies, advocating for robust and inclusive policies and strategies frameworks, and fostering ITU members' knowledge on ICT/digital accessibility, the BDT supports ITU membership efforts in **building an inclusive digital society for ALL** people and hence ensuring that everyone has equal and equitable use of ICT products and services.

As highlighted by the JIU Report 2018/6, "*among the UN specialized agencies, only ITU has a specific mandate on accessibility from its legislative body*." Also, within the UN framework, **ITU is recognized as the** **“UN leader in technology and accessibility,**” as echoed at the 45th session of the High-Level Committee on Management (HLCM) from 3-4 April 2023. In alignment with our mandate, the BDT Study Group ITU leads the charge in building universally inclusive and accessible ICTs for ALL.

The ITU Members’ work of the Study Group 1 Question 7 as already reflected in the last Report[[4]](#footnote-6) (2018-2022) highlighted that “*ICT accessibility is an essential condition for the development of inclusive societies. Governments, the private sector, industry, academic institutions and regional and international organizations must therefore work together to forge a holistic approach encompassing all people without discrimination and ensure that an ICT-accessible ecosystem is created in every country and region*.”(page 11 of the Report)

Additionally, the ITU Members' work in the framework of Question 7 also included several workshops and events during which, key requirements were identified to support all stakeholders’ efforts in advancing appropriate policies and strategies to ensure inclusive use of ICT products and services by all intended end-users. The importance of digital accessibility in advancing the inclusiveness agenda and ensuring that no one is left behind in the digital ecosystem was also highlighted in the webinar on “Digital accessibility during COVID-19 and the recovery period: An imperative to ensure inclusive societies in the digital world” in which was concluded that “*multistakeholder engagement is critical for ensuring that information, products and services are accessible to all people regardless of their gender, age, ability, location or financial means. (page 10 of the Report)*”

To best respond to the rapid evolution and integration of ICT in all aspects of lives the work of Question 7 and the concept of ICT/digital accessibility substantially evolved in the last 10 years. It is recognised that accessible ICTs are products and services that include embedded features at the design and fabrication stage so that they can be used by all people irrespective of capacity, needs, or circumstances. While the primary focus of the Question was to enhance digital accessibility for persons with disabilities and so address the barriers they encounter, it is now recognised that many digital accessibility principles and requirements can also enhance usability for everyone, especially in challenging circumstances given by a specific environment or context of use. For instance, young people might opt for messaging over calls, as do people with hearing impairments, and voice messages are used by most people when walking or driving while communicating, not just by blind, visually impaired, or illiterate people. Integrating user needs in universal design, accessibility standards, and usability procedures ensures that ICTs are not only technically functional but also usable by all people including persons with disabilities, older persons, or illiterates.

During the current cycle of work on Question 7, the ITU Members agreed on the necessity of incorporating digital accessibility requirements, principles, and standards from the design stage to ensure that digital products, services, applications, and solutions cater to the widest range of end-users, encompassing a diverse range of abilities and needs. Moreover, promoting the universal design in technology and mainstreaming ICT accessibility policies and strategies was recognised not only as a compulsory requirement to ensure that all people have equal and equitable use of ICT products and services but also as key to achieving an inclusive digital transformation as a whole. As a result, ITU Members - stated in their discussion (*as reflected in the Reports of Question 7, in particular, Rapporteur Meeting Reports 2024*) that the Question should evolve and include a holistic and human-centric approach that encompasses the needs of all people to use technology, as so ensure that digital transformation includes everyone equally and equitably.

The World Health Organization (WHO) estimates that one billion persons in the world live with some type of disability. According to WHO, about 80 percent of persons with disabilities live in low-income countries. Disability appears in different forms and degrees, regarding physical, sensitive, or mental aspects. Also, increasing life expectancy results in older persons having reduced capabilities. Therefore, it is likely that the number of persons with disabilities will continue to rise.

The inclusion in society of persons with disabilities is a policy of Member States. The objective of such policy is to bring about the necessary conditions for persons with disabilities to enjoy the same opportunities in life as the rest of the population. The disabilities policy has evolved, making urban infrastructure accessible and improving health and rehabilitation services for persons with disabilities. Moreover, the principles of equal opportunity and non-discrimination are common policies of Member States.

Concerning telecommunications, at the World Telecommunication Development Conference (Hyderabad, 2010) Member States resolved, by Resolution 20 (Rev. Hyderabad, 2010), that access to modern telecommunication/information and communication technology (ICT) facilities, services, and related applications must be provided on a non-discriminatory basis.

By 2050, the older generation will be larger than the under-15 population. In just 10 years, the number of older persons will surpass 1 billion people—an increase of close to 200 million people over the decade. Today two out of three people aged 60 or over live in developing countries. By 2050, this will rise to nearly four in five.[[5]](#footnote-7) Whereas people over 60 made up less than 15 percent of the world's population in 2022, this share is estimated to reach 28 percent by the end of the century[[6]](#footnote-8).

According to the United Nations World Population Prospects 2024,[[7]](#footnote-9) by the mid-2030s, it is projected that there will be 265 million people aged 80 or older, more than the number of infants (1 year old or younger). Furthermore, in the 2070s, the number of people over 65 is projected to reach 2.2 billion, surpassing the number of children (under 18).

Considering global trends such as an aging population in an increasingly digital world, the anticipated rise in the number of individuals with disabilities, along with projections for migrants and those facing literacy challenges, underscores the critical importance of ICT accessibility. To empower nearly half of the global population to effectively engage within the digital ecosystem, making ICT universally accessible will become an essential requirement.

The World Summit on the Information Society (WSIS) acknowledged that special attention should be given to the needs of older persons and persons with disabilities.

The United Nations General Assembly (UNGA) High-Level Meeting on the overall review of the implementation of the WSIS outcomes acknowledged the need to address the specific ICT challenges facing children, youth, persons with disabilities, older persons, indigenous peoples, refugees and internally displaced persons, migrants, and remote and rural communities.

The CRPD establishes basic principles, and also a State's obligations to ensure equal access to telecommunications/ICTs, including Internet, by persons with disabilities.

Resolution 175 (Rev. Dubai, 2018) of the Plenipotentiary Conference, on telecommunication/ICT accessibility for persons with disabilities and persons with specific needs, calls for the introduction of mechanisms to enhance the accessibility, compatibility, and usability of telecommunication/ICT services, and encourages the development of applications enabling the use of such services by persons with disabilities and persons with specific needs on an equal basis with others.

Resolution 70 (Rev. Geneva, 2022) of the World Telecommunication Standardization Assembly, on telecommunication/ICT accessibility for persons with disabilities and persons with specific needs, resolves that the ITU Telecommunication Standardization Sector (ITUT) study groups should consider aspects of universal design, non-discriminatory standards, service regulations and measures for all persons, especially persons with disabilities.

The ITU-G3ict Model ICT Accessibility Policy Report highlights a series of elements relevant to the development of policies on public access to ICTs, mobile communications, TV and video programmes, web access, and public procurement. The report also recognizes the need for flexible legislative frameworks that foster equitable access to telecommunications/ICTs for persons with disabilities in a constantly changing technological environment.

ITU-T Study Group 16 has conducted work and studies on multimedia coding, systems, and applications, and Study Group 6 of the ITU Radiocommunication Sector (ITU-R) has conducted work on broadcasting services relevant to ICT accessibility for persons with disabilities.

It is also pertinent to mention that broadband access and usage are highly dependent on literacy, and ICT literacy as well. The United Nations Educational, Scientific and Cultural Organization (UNESCO) estimates that 750 million people aged 15 and above worldwide are illiterate, i.e. they cannot read or write, while two-thirds of them are women. Several issues encountered by both disability groups and illiterate groups of people have common solutions.

It is important to gather information and data addressing many key issues relating to accessibility to telecommunications/ICTs for persons with disabilities. Therefore, a methodology should be developed to assist the information-gathering process.

During the coronavirus disease (COVID-19) pandemic, the issue of digital inclusion and telecommunication/ICT accessibility has gained significant momentum around the world. It becomes very important to mainstream ICTs through the implementation of policies, regulations, and communication strategies (including education, employment, and health) for the socio-economic development of all people, including persons with disabilities and persons with specific needs. Accessibility principles should be implemented at the design stage of ICT applications and services to bridge the digital divide.

**2. Question or issue for study**

1) Sharing good practices on implementing national ICT accessibility policies, legal frameworks, directives, guidelines, strategies, and technological solutions to improve the accessibility, compatibility, and usability of telecommunication/ICT digital products, tools, platforms, services, and solutions that are inherently usable by all people.

2) Mainstream ICT/digital accessibility of e-government and other socially relevant digital services.

3) Increase digital accessibility of ICT products and services by promoting AI and emerging technologies.

4) Foster inclusive education by ensuring the digital education platforms are accessible from design and so digitally accessible for all its intended users including those with disabilities ( including deaf and blind).

5) Promote training for persons with disabilities and specific needs in the use of telecommunications/ICTs.

6) Promote the development of ICT accessibility professionals as well as education and expertise to assist persons with disabilities and persons with specific needs (including older persons, illiterate, etc.) to use telecommunications/ICTs.

7) Use of accessible telecommunications/ICTs to promote equal and equitable employment opportunities for all people including for persons with disabilities, to ensure an inclusive and open society.

8) Develop national expertise and ensure the collection of information and statistics on telecommunication/ICT accessibility by desegregated end-users.

9) Establish mechanisms to involve from the design stage persons with disabilities - as the most exigent end-users, and persons with specific needs such as older persons in the process of elaborating legal/regulatory provisions, public policies, standards, and strategies related to advance telecommunication/ICT/digital accessibility of products and services persons with disabilities can also serve as validators of these digital accessible products and services.

10) Ensure that ICT accessibility is addressed from planning and design and mainstreamed in the development of smart cities and villages to ensure that these are “smart for all[[8]](#footnote-10)” cities and communities in which no one is left behind.

**Annex 1 PROPOSED NEW TERMS OF REFERENCE FOR ITU-D QUESTION 5/1 AS PROPOSED IN THE 3RD MEETING OF THE TDAG-WG-futureSGQ**

**MOD**

QUESTION 5/1

# Telecommunications/information and communication technologies for rural and remote areas

1. **Statement of the situation or problem**

In order to continue to contribute to the achievement of the objectives set by the Geneva Plan of Action of the World Summit on the Information Society (WSISand , as well as assist in the attainment of the Sustainable Development Goals (SDGs) , it is necessary to address the rural urban digital divide through digital infrastructure development coupled with access digital services for all. This entails making available the benefits of various e-services (e-education, e-health, e-government, e-agriculture, e-commerce, etc.) in the rural and remote areas of developing countries[[9]](#footnote-11) , including LDCs, LLDCs and SIDS, where more than half of the world's population live. Solutions that involve both terrestrial and satellite broadband connectivity to support network technologies that enable the use of common broadband applications required by citizens for digital transformation is now priority.

The installation of cost-effective and sustainable digital infrastructure, through the deployment of emerging technologies suitable digital services for rural and remote areas, is an important aspect calling for further studies, and specific outcomes need to be available for the vendor community to make available broadband Internet connectivity to support up-to-date e-services for the quality of life of inhabitants in rural and remote areas.

Existing network systems are primarily designed for urban areas, where the necessary support infrastructure (adequate power, building/shelter, accessibility, skilled manpower to operate, etc.) for setting up a broadband telecommunication network is assumed to exist. Hence, current and future systems need to be more adequately adapted to specific rural requirements in order to be widely deployed.

It is also important that service providers pay specific attention to high speed internet connectivity availability and the availability of relevant e applications

Shortage of power, difficult terrain, lack of skilled manpower, poor road access and transportation, and the difficulty of installing and maintaining networks ,though currently receiving a lot of attention, need to remain under study until no rural or remote area is left behind.

Rural and remote inhabitants also need to benefit from Artificial Intelligence

More detailed studies addressing the challenges of deploying cost-effective and sustainable next- generation broadband ICT infrastructure and digital services, as well as emerging technologies, in rural and remote areas are expected to be undertaken by ITU-D study groups, taking into account the global perspective in the era of digital transformation and social innovation.

Therefore, the WSIS target "Connect villages with telecommunications/ICTs and establish community access points" should be taken a step further through efforts to bring last mile connectivity to the village units and other rural and remote and ensuring that villagers have appropriate equipment and gadgets to access and utilise digital services.

It is also important to consider broadband demand creation and affordability programmes for the adoption of broadband and e-services by people in rural and remote areas. Government incentives, subsidies and other financing mechanisms are necessary. Work on the effective use of Universal Service Funds and best practices is also needs to continue.

1. **Question or issue for study**

There are still many challenges to overcome for spreading terrestrial and/or non-terrestrial telecommunications/ICTs and meeting the potential for provisioning high-speed broadband in rural and remote areas. Throughout the studies conducted in the past study periods, it has been clear from the experience of many countries that technologies and strategies for rural and remote areas are various and diversified from country to country. Also, the social, economic and technological situation in rural and remote areas is rapidly moving forward to the new economy. Therefore, it is important to update the study of broadband digital connectivity for rural and remote areas and to adapt and embrace social innovation and emerging technologies for rural inhabitants of developing countries, including LDCs, LLDCs and SIDSs, in respect of the following items:

* Harnessing the complementarity of Terrestrial and Non terrestrial networks
* Techniques and sustainable solutions that can impact on the provision of telecommunications/ICTs and availability of broadband digital infrastructure in rural and remote areas, with emphasis on those that employ up-to-date technologies designed to lower infrastructure capital and operating costs and support convergence between services and applications.
* How Artificial intelligence can improve rural infrastructure and access
* Challenges in creating or building broadband digital infrastructure in rural and remote areas.
* Needs and policies, mechanisms and regulatory initiatives to reduce the digital divide between rural and urban areas by increasing broadband digital access.
* The benefits of AI and challenges of AI Adoption in rural and remote areas
* Harnessing AI to enhance digital literacy and skills in rural communities
* Improvement of Quality of the services in rural and remote areas
* Business models for sustainable deployment of networks and services in rural and remote areas, taking into consideration priorities based on economic and social Integration and implementation of ICT services in rural and remote areas, including new and emerging technologies.

**Local content Development and relevant policies**

* 1. Encouragement of the development of new Internet applications and digital solutions for the socio-economic development of rural and remote areas, and promotion of innovation and digital transformation for rural and remote areas (in possible collaboration with Question 5/2).
* Opportunities for and challenges to access to services in locally relevant languages for indigenous people and for people with specific needs.
* Description of evolving system requirements for rural network systems specifically addressing the identified challenges of rural deployment.
* Analysis of case studies.

During the study carried out on each of these items, the following matters should also be studied and reflected in the outputs of the Question:

* Maintenance and operational aspects to provide a quality and continuous service.
* Strategies on the integration of ICT in education in rural areas.
* Relevant localization of content for rural and remote people.
* Affordability of services/devices for rural users to adopt so as to fulfil their development needs.
* Strategies to promote small and medium enterprises (SMEs), and complementary access and village connectivity networks, in accordance with national regulations, to provide telecommunication/ICTs services in rural and remote areas for promoting innovation and achieving national economic growth, in order to reduce the digital divide between rural and urban areas.

In addressing the above studies, the work under way in response to other ITU-D Questions and close coordination with relevant activities under those Questions should be taken into consideration, in particular Questions 1/1, 3/1 and 4/1 and Questions 1/2, 2/2, 4/2 and 5/2, are highly relevant. Likewise, the studies shall take into account cases related to persons with specific needs, indigenous communities, isolated and poorly served areas, LDCs, SIDS and LLDCs, and highlight their specific needs and other particular situations which need to be considered in developing broadband digital facilities for these areas.

1. **Expected output**

The output will be a report on the results of the work conducted for each item studied, together with a handbook, case study analysis reports, and one or more Recommendations and other relevant materials at appropriate times, either during the course of or at the conclusion of the cycle.

Information shall be consolidated and disseminated to the membership to enable them to organize seminars and workshops for sharing best practices on the digital deployment of broadband infrastructure in rural and underserved areas.

1. **Timing**

The output will be generated on an annual basis. The output from the first year will be analysed and assessed in order to update the work plan for the next year, and so on.

1. **Proposers/sponsors**

The Question was originally approved by WTDC-94, and subsequently revised by WTDC-98, WTDC- 02, WTDC-06, WTDC-10, WTDC-14 and WTDC-17.

1. **Sources of input**

Contributions are expected from Member States, Sector Members, Academia and Associates, as well as inputs from relevant Telecommunication Development Bureau (BDT) programmes, particularly those that have successfully implemented telecommunication/ICT projects in rural and remote areas. These contributions will enable those responsible for work on this Question to develop the most appropriate conclusions, recommendations and outputs. The intensive use of correspondence and online exchange of information, workshops and field experiences is encouraged for additional sources of inputs.

1. **Target audience**

|  |  |  |
| --- | --- | --- |
| **Target audience** | **Developed countries** | **Developing countries** |
| Relevant policy-makers | Yes | Yes |
| Telecom regulators | Yes | Yes |
| Rural authorities | Yes | Yes |
| Service providers/operators | Yes | Yes |
| Manufacturers, including software developers | Yes | Yes |
| Vendors | Yes | Yes |

1. **Proposed methods of handling the Question**

Within ITU-D Study Group 1.

1. **Coordination**

The ITU-D study group dealing with this Question will need to coordinate with:

* Focal points of the relevant Questions in BDT
* Coordinators of relevant project and programme activities in BDT
* Regional and scientific organizations with mandates covering the subject matter of the Question
* Other relevant stakeholders (see Recommendation ITU-D 20). As may become apparent within the life of the Question.

1. **BDT programme link**

WTDC Resolution 11 (Rev. Buenos Aires, 2017), Resolution 68 (Rev. Dubai, 2014) and Recommendation ITU-D 19.

Links to BDT programmes aimed at fostering the development of telecommunication/ICT networks as well as relevant applications and services, including bridging the standardization gap.

1. **Other relevant information**

As may become apparent within the life of the Question.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition. [↑](#footnote-ref-2)
2. These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition. [↑](#footnote-ref-4)
3. [ICT Digital Accessibility - ITU Resolutions, Global commitment and Resources](https://www.itu.int/en/ITU-D/Digital-Inclusion/Pages/ICT-digital-accessibility/default.aspx) [↑](#footnote-ref-5)
4. <https://www.itu.int/en/myitu/Publications/2021/07/06/12/15/Access-to-telecommunication-and-ICT-services-by-persons-with-disabilities> [↑](#footnote-ref-6)
5. [Population of Over-60-Year-Olds to Reach One Billion within the Decade (unfpa.org)](https://www.unfpa.org/press/population-over-60-year-olds-reach-one-billion-within-decade" \l ":~:text=In%20just%2010%20years%2C%20the%20number,200%20million%20people%20over%20the%20decade.&text=In%20just%2010%20years%2C,people%20over%20the%20decade.&text=10%20years%2C%20the%20number,200%20million%20people%20over) [↑](#footnote-ref-7)
6. [Projected world population distribution, by age group 2100 | Statista](https://www.statista.com/statistics/672546/projected-world-population-distribution-by-age-group/" \l ":~:text=Whereas%20people%20over%2060%20years%20made%20up%20less,is%20estimated%20to%20reach%2028%20percent%20in%202100.) [↑](#footnote-ref-8)
7. [World Population Prospects 2024 - Population Division - United Nations](https://population.un.org/wpp/)/[wpp2022\_summary\_of\_results.pdf (un.org)](https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/wpp2022_summary_of_results.pdf) [↑](#footnote-ref-9)
8. ITU Training - **Smart for all: Beyond smart cities “Smart for all”, Towards building inclusive and digitally accessible environments and communities (***Available in: Arabic, English, French, Russian and Spanish)*  [↑](#footnote-ref-10)
9. These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition. [↑](#footnote-ref-11)