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| PLENARY MEETING | **Addendum 7 toDocument WTDC-17/22-E** |
|  | **29 August 2017** |
|  | **Original: English** |
| Asia-Pacific Telecommunity Member Administrations |
| Revisions to the Study Groups Questions |
|  |
|  |
| **Priority area:** - Study Group Questions**Summary:**This document proposes modification of mandates of ITU-D Study Group Questions. Following current questions are proposed to continue to the next study period with modification or addition to their mandates and their titles.– Q5/1: Telecommunications/ICTs for rural and remote areas– Q6/1: Consumer information, protection and rights: Laws, regulation, economic bases, consumer networks– Q8/1: Examination of strategies and methods of migration from analogue to digital terrestrial broadcasting and implementation of new services– Q1/2: Creating the smart society: Social and economic development through ICT applications– Q2/2: Information and telecommunications/ICTs for e-health – Q3/2: Securing information and communication networks: Best practices for developing a culture of cybersecurity– Q4/2: Assistance to developing countries for implementing conformance and interoperability programmes– Q5/2: Utilization of telecommunications/ICTs for disaster preparedness, mitigation and response**Expected results:**According to this proposal, Study Group Questions will be modified.**References:**WTDC Resolution 2 (Rev. Dubai, 2014), Dubai Action Plan Section 5 (2014) |

Proposal

This document proposes modification of mandates of ITU-D Study Group Questions. Each ITU-D Study Groups and Questions had distinguished works in this study period under their mandate which described Dubai Action Plan (2014). Considering their priorities, emergency and needs from Membership especially developing countries, following current questions are proposed to continue to the next study period with modification of their mandates and their titles.

– Q5/1: Telecommunications/ICTs for rural and remote areas

– Q6/1: Consumer information, protection and rights: Laws, regulation, economic bases, consumer networks

– Q8/1: Examination of strategies and methods of migration from analogue to digital terrestrial broadcasting and implementation of new services

– Q1/2: Creating the smart society: Social and economic development through ICT applications

– Q2/2: Information and telecommunications/ICTs for e-health

– Q3/2: Securing information and communication networks: Best practices for developing a culture of cybersecurity

– Q4/2: Assistance to developing countries for implementing conformance and interoperability programmes

– Q5/2: Utilization of telecommunications/ICTs for disaster preparedness, mitigation and response

Q5/1 is proposed to continue with changing its title to “Best practices and guidelines for setting policies and regulations for the providing telecommunication/ICT services in rural and remote areas” and adding a handbook and case study analysis reports to its output expects in order to enhance assist to rural and remote area telecommunication/ICT services.

Q6/1 is proposed to continue with changing its title to “Best practices and guidelines for protecting consumers and enhancing their rights” and modifying its scope to study use and management of national telephone numbering resources additionally in order to enhance protection for consumers.

Q8/1 is proposed to continue with changing its title to “Best practices and guidelines for setting policies and regulations for migration from analogue to digital terrestrial broadcasting and provision of new services” and modifying its scope to analyse the impacts of emerging television/video distribution platforms and new technologies on broadcasting service in order to initiate provision of new technologies and services.

Q1/2 is proposed to continue with changing its title to “Best practices and guidelines for developing smart sustainable societies through ICTs” and modifying its scope to study tourism additionally in order to enhance economic growth in smart societies.

Q2/2 is proposed to continue with changing its title to “Best practices and guidelines for rapid implementation of eHealth” and modifying its scope to do additional study for condition and social reception include legal and financial issue to manage eHealth in developing countries in order to enhance economic implementation of eHealth.

Q3/2 is proposed to continue with changing its title to “Best practices and guidelines for addressing emerging and evolving threats to cybersecurity” and modifying its scope to study malware additionally in order to address to emerging cyber threats.

Q4/2 is proposed to continue with changing its title to “Best practices and guidelines for implementing conformance and interoperability (C&I) programmes and combating counterfeit ICT equipment and theft of mobile devices” and modifying its scope to study combating counterfeit and mobile device theft additionally in order to address its needs especially in developing countries.

Q5/2 is proposed to continue with changing its title to “Best practices and guidelines for utilizing telecommunications/ICTs for disaster management” and extending its scope to includes examining and gathering national and regional experience in various disaster management by utilizing ICTs.

The attachment of this document is proposed descriptions of each Questions. According to this document, Study Group Questions are proposed to be modified.

This does not propose to continue other 9 Questions (Q1/1, Q2/1, Q3/1, Q4/1, Q7/1, Q6/2, Q7/2, Q8/2 and Q9/2), but not to oppose to continue in our region. If one or more of these 9 Questions are decided to continue in WTDC-17, this proposes to modify the title of relevant Questions.

**MOD** ACP/22A7/1

STUDY GROUP 1

QUESTION 1/1

**Best practices and guidelines for setting policies and regulatiions for migration from existing networks to broadband networks in developing countries**

QUESTION 2/1

**Best practices and guidelines for setting policies and regulations for broadband access**

QUESTION 3/1

**Best practices and guidelines for setting policies and regulations to access cloud computing**

QUESTION 4/1

**Best practices and guidelines for determining the costs of telecommunication/ICT services**

QUESTION 5/1

**Best practices and guidelines for setting policies and regulations for providing telecommunication/ICT services in rural and remote areas**

# 1 Statement of the situation or problem

There is a strong gap in the levels of ICT access, ICT skills and telecommunication infrastructure between urban and rural communities. Provision of telecommunication/ICT services such as basic voice, short message, video-conference and internet services is not lucrative in sparsely populated rural areas of developing countries. So, development of telecommunications/ICTs in rural and remote areas of developing countries is slow unless effective government policy and initiatives are implemented.

Most of the time, 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 telecommunication network is assumed to exist. Hence, current systems need to be more adequately adapted to specific rural requirements in order to be widely deployed.

Some of the known challenges that developing countries planning to extend ICTs to rural and isolated areas must be tackle are the following:

1) Shortage of power

2) Expense of maintaining power backup – usually diesel – and environmental hazards thereof

3) Difficult terrain

4) Difficult access and transportation

5) Lack of skilled manpower

6) Installation and maintenance of networks is quite challenging and difficult

7) Very high operating cost

8) Low potential ARPU

9) Sparsely populated areas and scattered population clusters.

In order to promote social and economic activities in rural and remote areas, more detailed studies addressing the challenges of deploying cost-effective and sustainable ICT infrastructure in rural and remote areas are expected to be undertaken within the ITU‑D study groups, taking into account the global perspective.

The General Assembly adopted the outcome document of the high-level meeting of the General Assembly on the overall review of the implementation of the outcomes of the World Summit on the Information Society (WSIS):

We further express concern that digital divides remain between developed and developing countries, and that many developing countries lack affordable access to ICTs. By 2015, only 34 per cent of households in developing countries have internet access, with significant variations by country, compared with more than 80 per cent in developed countries. This means that two-thirds of the population residing in developing countries remains offline.

There are UN Sustainable Development Goals (SDGs) concerning this Question, such as; Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation, and Goal 10: Reduce inequality within and among countries.

As the facilitator of WSIS Action Lines, ITU has played its role, contributing to attain the relevant SDGs through the matrix to WSIS Action Lines. The ITU 19th Plenipotentiary Conference (PP-14) resolved Resolution 200, which describes “Connect 2020 Agenda for Global Telecommunication/ICT Development”. The annex to the Resolution lists four goals and 17 targets. Among these targets, the followings are related to Telecommunications/ICTs for rural and remote areas.

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

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

– Target 2.1.B: In the least developed countries (LDCs), 15 per cent of households should have access to the Internet by 2020.

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

In order to implement the Connect 2020 Agenda successfully, ITU-D should continue the study of Telecommunications/ICTs for rural and remote areas.

# 2 Question or issue for study

There are still many challenges to spread Telecommunications/ICTs in rural and remote areas. Throughout the previous studies, 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, social, economic, and technological situation in rural and remote areas is changing rapidly. Therefore, it is important to update the study of telecommunications/ICTs for rural and remote areas and to provide the best practices to other developing countries. It is further proposed that the study should progress in stages, to cover a four-year cycle in the following manner:

– Step 1: Continue identification of the full range of potential techniques and sustainable solutions that can significantly impact on the provision of telecommunication/ICT applications in rural and remote areas, with emphasis on those that employ the latest broadband technologies designed to lower infrastructure capital and operating costs, assisting convergence between services and applications, taking into considerations reducing greenhouse gas emissions. Rapid change of technologies, such as LTE and new satellite communication technologies, which could be utilized in rural and remote areas, should be taken into account. Here, we need coordination and avoid duplication with Question 2/1.

– Step 2: Continue to investigate and report on how the techniques identified above can be used to best deliver the range of services and applications required by rural and remote communities and adapted to the needs of their users. Development of locally relevant content and services should be considered.

– Step 3: Identify, assess and consolidate the challenges faced by developing countries in setting up or upgrading telecommunication infrastructure in rural areas, including those aimed at providing enhanced broadband connectivity through networks based on suitable interoperable IMT frequency bands, such as 450-470 MHz and other frequency bands identified for IMT.

– Step 4: Report on the public policies and regulatory measures carried out by developing countries to overcome or mitigate the above-mentioned challenges in rural and remote areas. Here, we need coordination and avoid duplication with Question 1/1.

– Step 5: Describe the evolution of system requirements for rural network systems specifically addressing such identified challenges of rural deployment. Here, we need Liaison and avoid duplication with ITU-T SG5 Question 14/5“Setting up a low-cost sustainable telecommunication infrastructure for rural communications in developing countries”.

– Step 6: Continue consideration of the quality of the services provided, and the cost effectiveness, degree of suitability in different geographies and sustainability of the techniques and solutions identified in the above‑mentioned steps.

– Step 7: Augment the report on the set of case studies that clearly demonstrate how a range of techniques, based on new technology aimed at providing reduced capital and operating cost solutions, reducing GHG emissions and enhancing community participation, can maximize the benefits of broadband telecommunication/ICT infrastructure in rural and remote areas. Case studies should be analysed as case study analysis reports.

– Step 8: Identify business models for sustainable deployment of networks and services in rural and remote areas, taking into consideration priorities based on economic and social indicators.

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

– environmental sustainability in deploying the infrastructure and necessary robustness of telecom infrastructure;

– maintenance and operational aspects to provide a quality and continuous service;

– demand-side factors and practices to generate and increase the usage of ICT devices and services;

– efforts to build ICT skill sets for the deployment of broadband services;

– relevant localization of content;

– affordability of services/devices for rural users to adopt so as to fulfil their development needs.

In dealing with the above studies, the work under way in response to other Questions being dealt with in ITU‑D, and close coordination with relevant activities under those Questions, in particular Questions 1/1, 2/1, 4/1 and Questions 2/2, 4/2 and 5/2, are highly relevant. In the same way, the studies shall take into account cases related to indigenous communities, isolated and poorly served areas, least developed countries (LDCs), small island developing states (SIDS) and landlocked developing countries (LLDCs), and highlight their particular needs and other particular situations which need to be considered in developing telecommunication/ICT facilities for these areas.

# 3 Expected output

The output will be a report on the results of the work conducted for each step above, together with a handbook, case study analysis reports, and one or more recommendations at appropriate times, either during the course of or at the conclusion of the cycle.

# 4 Timing

The output will be generated on a yearly 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.

# 5 Proposers/sponsors

The Question was originally approved by WTDC-94, and subsequently revised by WTDC-98, WTDC-02, WTDC-06, WTDC‑10 and WTDC‑14. Brazil, India and Japan.

# 6 Sources of input

Contributions are expected from Member States, Sector Members and Associates, as well as inputs from relevant 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 and experiences is encouraged for additional sources of inputs.

# 7 Target audience

| Target audience | Developed countries | Developing countries[[1]](#footnote-2)1 |
| --- | --- | --- |
| 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 |

a) Target audience

Depending on the nature of the output, upper- to middle‑level managers in operators and regulators in developing countries, including relevant rural authorities, are the predominant users of the output. The study outcomes will ensure adequate attention of vendors to focus on their development efforts to meet the needs of developing countries.

b) Proposed methods for implementation of the results

To be decided during the study period.

# 8 Proposed methods of handling the Question

Within Study Group 1.

# 9 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 this Question.

# 10 BDT programme link

WTDC Resolution 11 (Rev. Dubai, 2014), Resolution 37 (Rev. Dubai, 2014), 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.

# 11 Other relevant information

As may become apparent within the life of this Question.

QUESTION 6/1

**Best practices and guidelines for protecting consumers and enhancing their rights**

# 1 Statement of the situation or problem

At the World Telecommunication Development Conference (Dubai, 2014), account was taken of the wish of Member States and Sector Members to study the protection of telecommunication/ICT consumers, and that study was included under convergence. Faced with the rapid evolution of technologies and the appearance on the market of ever more sophisticated equipment, consumers who are not telecommunication/ICT experts can find themselves at a loss. Consequently, consumer information and consumer rights have become a priority and the topic should be made the subject of a separate study.

In the majority of meetings organized by the leading telecommunication and ICT players, the issue of consumer protection has become a constant concern, yet neither regulators, operators or service providers nor equipment manufacturers have defined or provided a specific legal basis for the legal consumer-protection instruments that need to be implemented in order to guarantee universal access to quality telecommunication/ICT services at low cost.

Given the pace of change and the time it takes to introduce and implement new legislation and regulations, bodies responsible for consumer protection (regulators, public and private agencies) should regularly amend their regulatory frameworks on the basis of the right balance between the interests of operators/service providers and those of users in areas such as subscription agreements, protection of intellectual property rights and management of digital rights, without detriment to innovative models of e‑commerce (for example, e‑commerce and commerce using mobile phones which open up wide prospects for transborder commerce by enabling hitherto underserved communities to have access to certain goods and services).

One of the key challenges for regulators is to establish a culture of security that promotes trust in telecommunication/ICT applications and services, one in which there is effective enforcement of privacy and consumer protection.

All consumers must have all the information which they need in order to make informed choices and benefit from adequate protection and compensation mechanisms when problems arise.

For most developing countries, the functioning of consumer-protection associations in general – and in the telecommunication/ICT sector specifically, especially in terms of experience and professionalism – presents difficulties when it comes to the management of consumer protection with state agencies, regulators or service providers/operators.

Education and awareness-raising for consumers, including persons with disabilities, women and children, should be a matter for all the parties involved in consumer protection (regulators, consumer-protection bodies and policy-makers).

The development of intersectoral competition with the emergence of services resulting from convergence (bundled services, services via mobile, etc.) makes it even more essential to enhance transborder cooperation, and for regulators and policy-makers to improve their competences and the tools intended to protect consumers. Furthermore, the question of after-sales service, which is one criterion for consumer choice, will need to be studied.

The study carried out over the last study cycle built on and encompassed the findings previously made on basic issues of consumer protection, in particular in the convergent environment, and enforcement, including appropriate national legislation, practices, procedures and sanctions.

The study addressed challenges of enforcement of law, policies and regulations in the area of consumer protection, specifically describing enforcement practices in selected countries, covering also protection in the context of convergence.

The study proposed a number of guidelines that are applicable in diverse circumstances and will assist Member States and Sector Members in their efforts to enforce their national laws in the area of protection for consumers of telecommunication/ICT services.

These studies on consumer protection in the context of convergence should nevertheless be completed and focus on the new challenges.

Member States and Sector Members would benefit from a report setting out the various resources, strategies and tools available to improve enforcement of their national and regional laws, rules and regulations governing consumer information, protection and rights, from the perspective of laws, regulations, economic bases and consumer-protection networks/organizations.

# 2 Question or issue for study

a) Organizational methods and strategies developed by public consumer-protection agencies with regard to legislation/regulations and regulatory activities.

b) Mechanisms/means put in place by regulators, operators/service providers and consumer-protection agencies to inform consumers, in particular the different subject areas covered.

c) The role of international, regional and national organizations for the protection of telecommunication/ICT consumers' rights.

d) Any economic and financial measures adopted by national authorities in the interests of consumers of telecommunication/ICT services, in particular specific categories of users (persons with disabilities, women and children).

e) Challenges in relation to the provision of new convergent services (transparency of service offers, fluidity of markets, quality and availability of services, value‑added services, after-sales services, procedures for dealing with consumers' complaints or concerns, and so on) relating to consumer protection, as well as the policies, regulations and rules established by national regulatory agencies (NRAs) to protect consumers against possible abuses by operators/providers of these convergent services.

f) Identification of best practices for national regulators and operators in the use and management of national telephone numbering resources.

# 3 Expected output

a) A report to Member States and Sector Members, consumer-protection organizations, operators and service providers, setting out guidelines and best practices that will need to be produced to help these actors to find the tools needed for a better culture of consumer protection as regards information, awareness-raising, inclusion of consumers' fundamental rights in laws and national, regional or international regulatory texts, and consumer protection in the provision of all telecommunication/ICT services and the use and management of national telephone numbering resources.

b) Organization of regional seminars on consumer protection: consumer information, protection and rights, laws, economic and financial bases, consumer networks.

# 4 Timing

An interim report will be presented to Study Group 1 in 2018. It is proposed that this study should be completed in 20120, when a final report will be submitted.

# 5 Proposers/sponsors

ITU‑D Study Group 1 proposed the continuation of this Question as modified herein.

# 6 Sources of input

a) Contributions from Member States, Sector Members and interested regional and international organizations, such as the United Nations and its specialized agencies, OECD and recognized consumer associations

b) Surveys/interviews

c) Regulatory information available through BDT

d) Websites of national telecommunication/ICT regulatory authorities for worldwide, regional and national governmental bodies responsible for consumer protection, and recognized consumer associations

e) Relevant work currently being undertaken in ITU‑T and ITU‑R

f) Other relevant sources.

# 7 Target audience

All the target audiences identified below, with particular attention to the needs of developing countries.

| Target audience | Developed countries | Developing countries[[2]](#footnote-3)1 |
| --- | --- | --- |
| Telecom policy-makers | Yes | Yes |
| Telecom regulators | Yes | Yes |
| Telecommunication/ICT consumer-protection organizations | Yes | Yes |
| Service providers/operators | Yes | Yes |
| Manufacturers | Yes | Yes |
| ITU‑D programme  | Yes | Yes |

a) Target audience – Who specifically will use the output

National telecom policy‑makers, regulators, service providers and operators, as well as recognized international, regional and national bodies for the protection of telecommunication/ICT consumers.

b) Proposed methods for implementation of the results

– Electronic distribution of the report and guidelines to all Member States, Sector Members and their respective NRAs, and ITU regional offices

– Distribution of the report and guidelines at the Global Regulators' Symposium and relevant BDT, BR and TSB seminars.

# 8 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:

– Objective 2 ☑

– Projects: Regional initiatives □

– Expert consultants □

3) In other ways – describe (e.g. regional, within other
organizations, jointly with other organizations, etc.) □

Together with recognized international, regional and national bodies for the protection of telecommunication/ICT consumers.

b) Why within a study group?

A study group provides the best vehicle for the widest participation by developing countries both in the work of the Question and in shaping the outcome documents (i.e. best-practice guidelines).

# 9 Coordination and collaboration

This Question should be coordinated with ITU‑D Objective 2 and with Questions relating to persons with disabilities, persons with specific needs and telecommunication/ICT services proposed for study during the 2014‑2018 study period in the study groups.

# 10 BDT programme link

ITU‑D Objective 2.

# 11 Other relevant information

As may become apparent within the lifetime of this Question.

QUESTION 7/1

**Best practices and guidelines for facilitating access to telecommunication/ICT services by persons with disabilities and specific needs**

QUESTION 8/1

**Best practices and guidelines for setting policies and regulations for migration from analogue to digital terrestrial broadcasting and provision of new services**

# 1 Statement of the situation or problem

1.1 Evidence suggests that the migration from analogue to digital sound and television broadcasting technologies will be universal and unstoppable over time in countries or regions at varying pace. While digital satellite sound and television broadcasting services have been introduced worldwide, digital terrestrial television and sound broadcasting are becoming a priority for every country of ITU regions.

1.2 ITU‑D can continue playing a role in helping Member States evaluate the technical and economic issues involved in migrating from terrestrial analogue to digital sound and television broadcasting. ITU‑D has been collaborating closely with both ITU‑R and ITU‑T on broadcasting matters, including through discussions being held in ITU‑R Joint Task Group 4-5-6-7, thus avoiding duplication.

1.3 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.

1.4 The impact of other television/video distribution platforms is expanding. New services and applications (community and regional TV on DTV and new broadcasting services: 3D, 4K, 8K, VR/AR, etc.) were also deemed important.

1.5 Following the preparation by the three ITU Sectors of numerous studies on implementing digital television broadcasting systems, and pursuant to the resolutions of the World Radiocommunication Conference (Geneva, 2012) (WRC-12) on exploiting the digital dividend in the future, there is a need to study the impact of the digital dividend on all parties and to review best practice in this regard, as these are essential steps for reaping maximum benefit from the frequencies concerned. The digital dividend spectrum can be used for new, innovative services, from interactive television to mobile communications and wireless broadband Internet services.

# 2 Question or issue for study

Studies under the Question will focus on the following issues:

2.1 Impact on developing countries of the coexistence of terrestrial television broadcasting with other terrestrial telecommunication services, taking into consideration relevant activities carried out in the other two ITU Sectors, including new uses for the digital dividend.

2.2 Analysis of gradual transition to digital terrestrial television broadcasting, focusing mainly on the activities necessary for the analogue switch-off, including:

a) analysis of ongoing progress in the quantity/availability of receiving terminals for reception by users of both sound and TV digital terrestrial broadcasts;

b) analysis of various analogue switch-off strategies, including economic/financial benefits granted to lower-income people for the acquisition of the necessary means for terrestrial reception of digital broadcasting signals;

c) analysis of spectrum re-planning strategies, such as the reallocation of existing broadcasting channels, to allow the coexistence of broadcasting and other services, considering new uses for the digital dividend; and

d) analysis of effective marketing strategies to accelerate the process of public awareness about digital broadcasting.

2.3 Spectrum planning for bands allocated to broadcasting services in preparation for the analogue switch-off, the digital dividend, and possible band plans, the planning of different services including allotment plans, and specific bands to be allocated to broadcasters after the analogue switch-off, within the purview of ITU-R.

2.4 Analysing the impacts of emerging television/video distribution platforms and new technologies on broadcasting service.

a) analysing the progress of emerging television/video distribution platforms such as mobile TV, community and regional TV on DTV, and new technologies such as 3D, 4K, 8K, VR/AR, etc.

b) analysing the impacts on increasing penetration of sound and public TV to people.

c) analysing the strategies on deploying new systems and technologies for the broadcasting service.

2.5 The use of the digital dividend frequency bands resulting from the transition to terrestrial digital broadcasting, including technical, regulatory and economic aspects, such as:

a) status of the use of the digital dividend frequency bands;

b) standards/recommendations adopted or currently being studied by the other two ITU Sectors related to the topic;

c) sharing of the digital dividend frequency band;

d) harmonization and cooperation at regional level;

e) the role of the digital dividend in saving financing, cost savings on the transition to digital, and best experience and practice in this regard.

# 3 Expected output

a) A report reflecting studies outlined in §§ 2.1, 2.2, 2.3, 2.4 and 2.5 above.

b) Collection and periodic dissemination of relevant data emanating from the organizations and groups listed in § 8 below. Periodic updates on studies taking place in the other ITU Sectors.

c) Comprehensive guidelines on transition from analogue to digital broadcasting, focusing especially on strategies to speed up the migration and analogue switch-off.

d) Comprehensive guidelines for the deployment of emerging TV/video distribution platforms and new technologies, and provisioning of new applications.

e) Best practices report on fostering public awareness regarding the transition from analogue to digital broadcasting.

f) Compendium of public policies on the digital terrestrial television transition, bringing together the regulatory experiences of countries concerning strategies for spectrum re-planning and planning and executing the analogue switch-off.

# 4 Timing

A yearly progress report is expected at each study group meeting.

# 5 Proposers/sponsors

Brazil; Arab States.

# 6 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 terrestrial sound and television broadcasting below 1 GHz.

3) Examination of the impact on developing countries of transition to digital sound and television broadcasting, re-planning, convergence and interactivity.

4) Outputs of WTDC Resolution 9 (Rev. Dubai, 2014), including relevant recommendations, guidelines and reports.

# 7 Target audience

| Target audience | Developed countries | Developing countries[[3]](#footnote-4)1 |
| --- | --- | --- |
| Telecom policy-makers | Yes | Yes |
| Telecom regulators | Yes | Yes |
| Service providers/operators | Yes | Yes |
| Broadcasting operators | Yes | Yes |
| ITU‑D programme | Yes | Yes |

a) 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.

b) 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.

# 8 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.

# 9 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

– ITU‑R Joint Task Group 4-5-6-7 and Study Group 1 Working Party 1B

– 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.

# 10 BDT programme link

Outputs 1.2, 2.2 and 4.1

WTDC Resolutions 10 (Rev. Hyderabad, 2010) and 9, 17 and 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.

# 11 Other relevant information

As may become apparent within the life of the Question.

**MOD** ACP/22A7/2

STUDY GROUP 2

QUESTION 1/2

**Best practices and guidelines for developing smart sustainable societies through ICTs**

# 1 Statement of the situation or problem

All areas of society – culture, education, health, transport, trade and tourism – will depend for their development on the advances made through ICT systems and services in their activities. ICTs can play a key role in the protection of property and persons; smart management of motor vehicle traffic; saving electrical energy; measuring the effects of environmental pollution; improving agricultural yield; management of healthcare and education; management and control of drinking water supplies; solving the problems facing cities and rural areas; and people moving globally with safety and certainty. This is the smart society.

Delivering the promise of the smart society relies on three technological pillars – connectivity, smart devices and software – and on sustainable development principles.

Connectivity encompasses and includes existing and traditional networks (mobile, broadband, and cable) as well as new technologies most often reliant on radio spectrum. Connectivity is a key enabler and component of machine-to-machine (M2M) and resulting applications and services such as e‑government, traffic management and road safety.

Smart devices are the things that are connected that create smart societies. Cars, traffic lights and cameras, water pumps, electricity grids, home appliances, street lights and health monitors are all examples of things that need to become smart, connected devices so that they can deliver significant advancements in sustainability and economic and social developments. This is especially important in developing countries.

Software development connects and enables the first two pillars that, all working together, support new services that would never have been possible before. These new services are transforming everything from energy efficiency to environmental improvements, road safety, food and water safety, manufacturing and basic government services.

# 2 Question or issue for study

1) Discussion of and assistance in raising awareness of methods of improving connectivity to support the smart society, including connectivity to support smart grids, smart cities and e‑environment and e‑health applications.

2) Examination of best practices for fostering and enabling deployment and use of smart devices, including mobile devices, the importance of the application of such devices having been highlighted by BDT's m‑Powering Development initiative, launched at ITU TELECOM World 2012 in Dubai, with an emphasis on successful examples from rural areas in developing countries.

3) Survey of methods and examples of how software, both open-source and/or proprietary, enables connectivity of smart devices, thereby supporting smart services and smart societies.

4) Definition of a measurement and performance benchmark for quality-of-life indicators in smart cities, and possible regulation and communication mechanisms that can be followed for good urban governance.

5) The experiences of developed countries that have built smart cities.

6) Creation of a national ecosystem that will include all stakeholders involved in defining national road-safety policy.

7) Definition of a regional cooperation and coordination framework in the area of intelligent transport on cross‑border networks.

8) Telecommunication/ICT services and applications for tourism that enhance economic growth in smart societies.

# 3 Expected output

The output expected from this Question will include:

a) Case studies on how to enable use of telecommunications and other means of connectivity, including M2M communications, and access to ICT applications to support sustainable development and foster smart societies in developing countries.

b) Increasing awareness among relevant participants regarding the adoption of open-source strategies for enabling access to telecommunications, and studying the drivers for increasing the degree of preparedness to use and develop open-source software to support telecommunications in developing countries, as well as creating opportunities for cooperation between ITU members by reviewing successful partnerships.

c) Analysis of factors affecting the efficient roll-out of connectivity to support ICT applications that enable e‑government applications in smart cities and rural areas.

d) Sharing of best practices in the use of ICT networks to enable road safety.

e) Annual progress reports and detailed final report containing analysis, information and best practices, as well as any practical experience acquired in the areas of use of telecommunications and other means of enabling ICT applications and connecting devices for development of the smart society.

f) Case studies on utilizing ICT services and applications for tourism, and measurement report of how ICT services and applications contribute to sustainable smart societies.

# 4 Timing

A preliminary report should be submitted to the study group in 2016. The studies should be concluded in 2017, by which time a final report will be submitted.

# 5 Proposers/sponsors

The Question was approved by WTDC-14, on the basis of Question 17-3/2 and proposals from the Asia-Pacific Telecommunity, Arab States, Member States of the African Telecommunications Union, the United States, Algérie Télécom Spa, Intervale (Russian Federation) and the A.S. Popov Odessa National Academy of Telecommunications (Ukraine).

# 6 Sources of input

a) Progress on study of the Questions relevant to this issue in ITU‑T and ITU‑R study groups.

b) Contributions from Member States, Sector Members, Associates other United Nations agencies, regional groups, and BDT coordinators.

c) Progress of BDT initiatives with other United Nations organizations and the private sector on using ICT applications for development of the smart society.

d) Progress on any other relevant activity carried out by the ITU General Secretariat or BDT.

# 7 Target audience

| Target audience | Developed countries | Developing countries[[4]](#footnote-5)1 |
| --- | --- | --- |
| Telecom policy-makers | Yes | Yes |
| Telecom regulators | Yes | Yes |
| Service providers/operators | Yes | Yes |
| Manufacturers (telecommunication/ICT equipment manufacturers, automobile industry, etc.) | Yes | Yes |
| BDT programmes | Yes | Yes |

a) Target audience – Who specifically will use the output

Relevant policy‑makers, regulators and participants in the telecommunication/ICT and multimedia sectors.

b) Proposed methods for the implementation of the results

In guidelines for implementing BDT regional initiatives.

# 8 Proposed methods of handling the Question or issue

Within Study Group 2.

# 9 Coordination and collaboration

– The relevant BDT unit dealing with these issues

– Relevant work in progress in the other two ITU Sectors.

# 10 BDT programme link

All BDT programmes are concerned by the Question as regards, in particular, aspects relating to information and communication infrastructure and technology development, ICT applications, enabling environment, digital inclusion and emergency telecommunications.

# 11 Other relevant information

To be identified later during the life of this new Question.

QUESTION 2/2

**Best practices and guidelines for rapid implementation of eHealth**

# 1 Statement of the situation or problem

E‑health is an integrated system of healthcare delivery that employs telecommunications/ICTs as a substitute for face‑to-face contact between medical staff and patient. It includes many applications, such as telemedicine, electronic medical records, medical consultation at a distance, medical consultation between rural medical centres and urban hospitals, etc. E‑health provides for transmission, storage and retrieval of medical information in digital form between doctors, nurses, other medical staff and patients for clinical, educational and administrative purposes, both at the local site (your workplace) and at a distance (remote workplaces). In some developing countries[[5]](#footnote-6)1, the number of mobile phones has overtaken the number of fixed phones, and the mobile telecommunication network could be considered a more attractive platform for the introduction of e‑health services.

E‑health is playing a very important role in healthcare delivery in developing countries, where the acute shortage of doctors, nurses and paramedics is directly proportional to the enormous unsatisfied demand for health services. Some developing countries have already successfully implemented small pilot telemedicine projects, and they are looking forward to proceeding further by considering the development of e‑health master plans, as recommended by the World Health Organization in its Resolution WHA58.28 in May 2005, which aims, in particular, at reducing disparities with regard to medical services between urban and rural areas and pays special attention to the least developed countries (LDCs).

# 2 Question or issue for study

The Question shall:

a) Take further steps to assist in raising the awareness of decision-makers, regulators, telecommunication operators, donors and customers about the role of ICTs in improving healthcare delivery in developing countries.

b) Encourage collaboration and commitment between the telecommunication sector and the health sector in developing countries, in order to maximize the utilization of limited resources on both sides for implementing e‑health services.

c) Continue to disseminate experiences and best practices with the use of ICTs in e‑health in developing countries.

d) Collect information about the condition and social reception include legal and financial issue to manage e-Health in developing countries.

e) Encourage cooperation among developing and developed countries in the field of mobile e‑health solutions and services.

f) Support BDT’s e-Health activities in cooperation with other UN agencies, such as WHO, in the field of non-infectious disease, infectious disease including Pandemics, and mother and child in particular.

g) In conjunction with ITU-T, provide the suitable guidelines on managing medical bigdata applications, AI and deep-learning linking with networks, in particular on how to use such new technologies.h) Introduce and disseminate ITU technical standards related to e‑health for developing countries.

i) Introduce and disseminate health information issued by WHO or other UN agency related to e-Health and/or health hazard with ICTs (for example EMF, health hazard of children in performing burning off a field of waste).

# 3 Expected output

The outputs expected from this Question will include:

a) Guidelines on how to draft the telecommunication/ICT part of an e‑health master plan.

b) Guidelines with regard to the use of mobile telecommunications for e‑health solutions in developing countries.

c) Collection and summary of the requirements and effectiveness of telecommunication infrastructure for the successful implementation of e‑health applications, taking into account the environment of developing countries.

d) Dissemination of the technical standard related to the introduction of e‑health services in developing countries.

e) Collaboration with ITU‑T Study Group 16 in order to accelerate the elaboration of technical standards for e‑health applications.

f) Collaboration with the relevant BDT programme, if so requested, to support implementation of the telecommunication/ICT component of e‑health projects in developing countries, including advice on best practices on how to train developing countries in the use of the telecommunication/ICT component of e‑health projects.

g) Sharing and dissemination of best practices on e‑health applications in developing countries using the ITU/BDT website, in close collaboration with the relevant BDT programme.

h) Dissemination of advanced information about new e-Health business with new technology (such as big data, AI and deep learning linking with networks)

# 4 Timing

The work undertaken by the study group can be phased over the next study period. The participation of experts from the group for the provision of assistance in the development of e‑health projects in developing countries will be encouraged.

# 5 Proposers/sponsors

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

# 6 Sources of input

Inputs will be expected from Member States and Sector Members, experts in e‑health applications, etc. Contributors and contacts have already been established during the 2002-2006, 2006-2010 and 2010-2014 study periods, and new contacts will be invited, too. This Question supported the mobile e‑health initiative for developing countries launched in 2009.

# 7 Target audience

| Target audience | Developed countries | Developing countries[[6]](#footnote-7)1 |
| --- | --- | --- |
| Telecom regulators | Yes | Yes |
| Service providers/operators | Yes | Yes |
| Manufacturers | Yes | Yes |
| ITU‑D programme  |  |  |
| Ministries of health | Yes | Yes |
| Medical organizations | Yes | Yes |
| NGOs in the field of health | Yes | Yes |

This Question aims at stimulating collaboration between the telecommunication/ICT and health communities, between developed and developing countries, and among developing countries. The experience gained from telecommunications/ICT for e‑health applications in developing countries will also be expected to benefit equipment suppliers and service providers in developed countries.

a) Target audience – Who specifically will use the output

Telecommunication/ICT and health communities, between developed and developing countries and among developing countries, as well as telecom regulators manufacturers, medical organizations, NGOs and service providers.

b) Proposed methods for implementation of the results

Within Study Group 2. The outputs of this Question will be made available via the ITU‑D website.

# 8 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: ICT applications and services ☑

– 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 take into account the ongoing/planned programmes/regional initiatives and optimize resources.

# 9 Coordination and collaboration

Coordination between the telecommunication/ICT and health communities, between developed and developing countries and among developing countries, as well as telecom regulators manufacturers, medical organizations, NGOs and service providers.

# 10 BDT programme link

Programme: ICT applications and services (Output 3.2)

# 11 Other relevant information

The activity for the next study cycle can be based on the final report, and on other initiatives which resulted from Question 14-3/2 of the last study period, namely mobile telecommunications for mobile e‑health.

QUESTION 3/2

**Best practices and guidelines for addressing emerging and evolving threats to cybersecurity**

# 1 Statement of the situation or problem

Securing information and communication networks and developing a culture of cybersecurity have become key in today’s world for a number of reasons, including:

a) the explosive growth in the deployment and use of information and communication technology (ICT);

b) cybersecurity remains a concern of all and there is thus a need to assist countries, in particular developing countries, to protect their telecommunication/ICT networks against cyberattacks and threats;

c) the need to endeavour to ensure the security of these globally interconnected infrastructures if the potential of the information society is to be achieved;

d) the growing recognition at the national, regional and international levels of the need to develop and promote best practices, standards, technical guidelines and procedures to reduce vulnerabilities of and threats to ICT networks;

e) the need for national action and regional and international cooperation to build a global culture of cybersecurity that includes national coordination, appropriate national legal infrastructures, and watch, warning and recovery capabilities, government/industry partnerships, and outreach to civil society and consumers;

f) the requirement for a multistakeholder approach to effectively make use of the variety of tools available to build confidence in the use of ICT networks;

g) United Nations General Assembly (UNGA) Resolution 57/239, on creation of a global culture of cybersecurity, invites Member States "to develop throughout their societies a culture of cybersecurity in the application and use of information technology";

h) UNGA Resolution 68/167, on the right to privacy in the digital age, affirms, *inter alia*, "that the same rights that people have offline must also be protected online, including the right to privacy";

i) best practices in cybersecurity must protect and respect the rights of privacy and freedom of expression as set forth in the relevant parts of the Universal Declaration of Human Rights, the Geneva Declaration of Principles adopted by the World Summit on the Information Society (WSIS) and other relevant international human rights instruments;

j) the Geneva Declaration of Principles indicates that "A global culture of cybersecurity needs to be promoted, developed and implemented in cooperation with all stakeholders and international expert bodies", the Geneva Plan of Action encourages sharing best practices and taking appropriate action on spam at national and international levels, and the Tunis Agenda for the Information Society reaffirms the necessity for a global culture of cybersecurity, particularly under Action Line C5 (Building confidence and security in the use of ICTs);

k) ITU was requested by WSIS (Tunis, 2005), in its agenda for the implementation and follow-up, to be the lead facilitator/moderator for Action Line C5 (Building confidence and security in the use of ICTs), and ITU‑T, ITU‑R, ITU‑D and the General Secretariat, based on such responsibility and in response to relevant resolutions adopted by the World Telecommunication Development Conference (WTDC) (Doha, 2006 and Hyderabad, 2010), by the Plenipotentiary Conference (Antalya, 2006 and Guadalajara, 2010), as well as by the World Telecommunication Standardization Assembly (Johannesburg, 2008 and Dubai, 2012), have carried out many studies in order to improve cybersecurity;

l) WSIS outputs (both phases: Geneva, 2003 and Tunis, 2005) called for building confidence and security in the use of ICTs;

m) WTDC Resolution 45 (Rev. Dubai, 2014) supported the enhancement of cybersecurity among interested Member States;

n) consistent with its mandate, ITU‑D should play a role in bringing together Member States, Sector Members and other experts to share experiences and expertise for securing ICT networks;

o) the results of Question 3/2 in the past study period, which include numerous reports, and contributions from across the globe;

p) there have been various efforts to facilitate the improvement of network security, including the work of Member States and Sector Members in standards-setting activities in ITU‑T and in the development of best-practice reports in ITU‑D; by the ITU secretariat in the Global Cybersecurity Agenda (GCA); and by ITU‑D in its capacity-building activities in the relevant programme; and, in certain cases, by experts across the globe;

q) governments, service providers and end-users, particularly in least developed countries (LDCs), face unique challenges in developing security policies and approaches appropriate to their circumstances;

r) Member States and infrastructure operators would benefit from additional reports detailing the various resources, strategies and tools available to build confidence in the use of ICT networks and the role of international cooperation in this regard;

s) spam and malware continues to be a serious concern;

t) evolving methodologies on common testing criteria for telecommunication networks;

u) the need for simplified test procedures at basic level for security testing of telecommunication networks to promote a security culture.

# 2 Question or issues for study

a) Discuss approaches and best practices for evaluating the impact of spam and malware within a network, and provide the necessary measures, including mitigation techniques, that developing countries can use, taking into account existing standards and available tools.

b) Provide information on current cybersecurity challenges that service providers, regulatory agencies and other relevant parties are facing.

c) Continue to gather national experiences from Member States relating to cybersecurity, and to identify and examine common themes within those experiences.

d) Continue to analyse results of the cybersecurity awareness survey carried out in the last study period, and issue an updated survey so as to measure progress over time.

e) Provide a compendium of relevant, ongoing cybersecurity activities being conducted by Member States, organizations, the private sector and civil society at the national, regional and international levels, in which developing countries and all sectors may participate, including information gathered under c) above.

f) Examine specific needs of persons with disabilities, in coordination with other relevant Questions.

g) Examine ways and means to assist developing countries, with the focus on LDCs, in regard to cybersecurity-related challenges.

h) Continue to gather national experiences and national requirements in the area of child online protection, in coordination with other relevant activities.

i) Hold ad hoc sessions, seminars and workshops to share knowledge, information and best practices concerning effective, efficient and useful measures and activities to enhance cybersecurity, using outcomes of the study, to be collocated as far as possible with meetings of Study Group 1 or of the rapporteur group for the Question.

j) Gather national experience and requirements on common criteria and security testing that would facilitate the development of a framework and guidelines that could speed up the security testing of telecommunication equipment, in collaboration with the relevant ITU‑T study groups and other standards-developing organizations (SDOs), as appropriate, and taking into account available information and material in these entities.

# 3 Expected output

1 Reports to the membership on the issues identified in § 2 a) to j) above. The reports in question will reflect that secure information and communication networks are integral to building of the information society and to the economic and social development of all nations. Cybersecurity challenges include potential unauthorized access to, destruction of and modification of information transmitted on ICT networks, as well as countering and combating spam/malware. However, the consequences of such challenges can be mitigated by increasing awareness of cybersecurity issues, establishing effective public-private partnerships and sharing successful best practices employed by policy-makers and businesses, and through collaborating with other stakeholders. In addition, a culture of cybersecurity can promote trust and confidence in these networks, stimulate secure usage, ensure protection of data and privacy while enhancing access and trade, and enable nations to better achieve the economic and social development benefits of the information society.

2 Educational materials for use in workshops, seminars, etc.

3 Accumulation of knowledge, information and best practices on effective, efficient and useful measures and activities to enhance cybersecurity in developing countries resulting from ad hoc sessions, seminars and workshops.

# 4 Timing

This study is proposed to last four years, with preliminary status reports to be delivered on progress made after 12, 24 and 36 months.

# 5 Proposers/sponsors

(TBA) ITU‑D Study Group 1; Arab States; Inter-American proposal; Japan; Islamic Republic of Iran.

# 6 Sources of input

a) Member States and Sector Members

b) Relevant ITU‑T and ITU‑R study group work

c) Relevant outputs of international and regional organizations

d) Relevant non-governmental organizations concerned with the promotion of cybersecurity and a culture of security

e) Surveys, online resources

f) Experts in the field of cybersecurity

g) Other sources, as appropriate.

# 7 Target audience

| Target audience | Developed countries | Developing countries[[7]](#footnote-8)1 |
| --- | --- | --- |
| Telecom policy-makers | Yes | Yes |
| Telecom regulators | Yes | Yes |
| Service providers/operators | Yes | Yes |
| Manufacturers | Yes | Yes |

a) Target audience

National policy-makers and Sector Members, and other stakeholders involved in or responsible for cybersecurity activities, especially those from developing counties.

b) Proposed methods for implementation of the results

The study programme focuses on gathering information and best practices. It is intended to be informative in nature and can be used to raise awareness for Member States and Sector Members of the issues of cybersecurity and to draw attention to the information, tools and best practices available, the results of which may be used in conjunction with BDT-organized ad hoc sessions, seminars and workshops.

# 8 Proposed methods of handling the Question or issue

The Question will be addressed within a study group over a four-year study period (with submission of interim results), and will be managed by a rapporteur and vice‑rapporteurs. This will enable Member States and Sector Members to contribute their experiences and lessons learned with respect to cybersecurity.

# 9 Coordination

Coordination with ITU‑T, in particular Study Group 17 or its successor, ITU‑D Question 7/1 on persons with disabilities, as well as other relevant organizations, including FIRST, IMPACT, APCERT, OAS CICTE, OECD, RIRs, NOGs, M3AAWG, ISOC, GFCE and others. Given the existing level of technical expertise on the issue in these groups, all documents (questionnaires, interim reports, draft final reports, etc.) should be sent to them for comment and input prior to being submitted to the full ITU‑D study group for comment and approval.

# 10 BDT programme link

The BDT programme under Output 3.1 of Objective 3 shall facilitate exchange of information and make use of the output, as appropriate, to satisfy programme goals and the needs of Member States.

# 11 Other relevant information

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QUESTION 4/2

**Best practices and guidelines for implementing conformance and interoperability (C&I) programmes and combating counterfeit ICT equipment and theft of mobile devices**

# 1 Statement of the situation or problem

Inclusion of an ITU‑D study group Question on this matter provides an effective way to further the aims of Resolution 47 (Rev. Dubai, 2014) of the World telecommunication Development Conference (WTDC), Resolution 76 (Rev. Hammamet, 2016), Resolution 96 (Hammamet, 2016) and Resolution 97 (Hammamet, 2016) of the World telecommunication Standardization Assembly (WTSA) and Resolution 177 (Rev. Busan, 2014) and Resolution 188 (Busan, 2014) of the Plenipotentiary Conference.

Member States and ITU‑D Sector Members can assist and guide each other by conducting studies, building tools to bridge the standardization gap, and navigating issues related to matters raised in the above-mentioned resolutions. ITU‑D can harness the energy of its membership to examine these important issues.

In a global economy characterized by rapid technological change, a variety of ICT solutions and the convergence of telecommunication networks and services, ICT users – public entities, businesses and consumers – understandably have certain expectations regarding interoperability, quality and also environmental sustainability of products and services.

In this regard, to facilitate safe usage of products and services anywhere in the world, regardless of who is the manufacturer or service provider, it is crucial that products and services be developed in accordance with relevant international standards, regulations and other specifications, and that their compliance be tested.

Counterfeit of telecommunication/ICT equipment is a growing issue in socio-economic problem. It causes significant negative impact to the innovation, levels of foreign direct investment, growth in the economy and levels of employment and may also redirect resources into organized criminal networks.

Preventing and combating to use stolen mobile device is another issue. The theft of user-owned mobile devices may lead to the criminal use of telecommunication/ICT services and applications, resulting in economic losses for the lawful owner and user.

Implementing the measures to combating counterfeit of telecommunication/ICT device and mobile device theft are urgent and high interested issue among developing countries. Methodologies of conformance and interoperability (C&I) can provide technical solutions for them.

The Question will ultimately contribute to international community's effort in adopting eco‑friendly set of harmonized standards, since the countries can, through conformance and interoperability (C&I) regime instruments, better control and authenticate products.

Conformity assessment increases the probability of interoperability, i.e. equipment built by different manufacturers being capable of communicating successfully. In addition, it helps to ensure that products and services are delivered according to expectations. Conformity assessment builds consumer trust and confidence in tested products and consequently strengthens the business environment and, thanks to interoperability, the economy benefits from business stability, scalability and cost reduction of systems, equipment and tariffs.

While economically C&I increases market opportunities, encourages trade and technology transfer and contributes to the removal of technical barriers and prevent using counterfeit products, socially it helps to extend ICT service availability and affordability to all people at a good level of quality.

To increase the benefits of C&I, many countries have adopted harmonized C&I regimes at both national and bi-/multilateral level. However, some developing countries have not yet done so because of a number of major challenges, such as the lack of appropriate/adequate infrastructure and technology development to be in a position to test or to recognize tested ICT equipment (e.g. accredited laboratories).

Availability of high-quality, high-performing products will accelerate widespread deployment of the infrastructure, technologies and associated services, allowing people to access the information society regardless of their location or chosen device, and contributing to implementing the outcomes of the World Summit on the Information Society (WSIS).

In this respect, other outcomes of the Plenipotentiary Conference, ITU‑D, ITU‑T and ITU‑R resolutions and Recommendations, and in particular PP Resolution 177 (Rev. Busan, 2014, WTDC Resolution 47 (Rev. Dubai, 2014), WTSA Resolution 76 (Rev. Hammamet, 2016), WTSA Resolution 96 (Hammamet, 2016), WTSA Resolution 97 (Hammamet, 2016) and Resolution ITU‑R 62 (Geneva, 2012) of the Radiocommunication Assembly, should serve as a basis for the study of this Question, and as the framework for ITU's business plan developed upon request of ITU's Member States, which establishes the following four pillars:

• Pillar 1: Conformance assessment

• Pillar 2: Interoperability

• Pillar 3: Capacity building

• Pillar 4: Establishment of C&I regimes, including building laboratories.

The report presented by the Secretary-General to the 2013 session of the ITU Council ("Conformance and Interoperability Programme Status Report and Action Plan" – Document C13/24(Rev.1)) was positively commented on by the councillors, who unanimously referred to the importance of activities relating to conformance and interoperability, supported the work accomplished by ITU in that area, and urged the Union to continue that work.

# 2 Question or issue for study

The Question is established in ITU‑D Study Group 2, to examine these issues and undertake the following, taking into account the economic impact of previously mentioned programmes, including on Member States and Sector Members:

2.1 In close collaboration with the relevant BDT programme(s), identify and assess what the challenges, priorities and problems are for countries, subregions or regions with respect to the application of ITU‑T Recommendations, approaches to meeting the confidence needs associated with equipment conformance to ITU‑T Recommendations and other related issues, identifying critical issues/priority issues in countries, subregions or regions, and identifying related best practices.

2.2 Examine how information transfer, know-how, training and institutional and human capacity development can strengthen the ability of developing countries to reduce risks associated with low-quality equipment, and equipment interoperability issues. Examine effective information-sharing systems and best practices to assist in this work.

2.3 Examine global trends related to these matters.

2.4 Elaborate a methodology for the implementation of this Question, in particular gathering evidence and information regarding current best practices being adopted to create C&I programmes, taking into consideration progress achieved by the all ITU Sectors in this regard.

2.5 Techniques designed to promote harmonization of C&I regimes, to improve regional integration and to contribute to bridging the standardization gap, consequently reducing the digital divide.

2.6 Information regarding the establishment of mutual recognition agreements (MRA) between countries. Guidance on concepts and procedures to establish and manage MRAs.

2.7 Techniques on market surveillance and maintenance of C&I regimes in order to guarantee the credibility and sustainability of the conformance assessment scheme put in place.

# 3 Expected output

In the next ITU‑D study period 2019-2021, studies of various issues related to conformance and interoperability are to be reported, including a description of the technical, legislative and regulatory framework that would be needed to implement appropriate C&I programmes by developing countries.

Specifically, the following outputs are envisaged:

a) Harmonized guidelines on technical, legal and regulatory aspects of a C&I regime

b) Feasibility studies regarding the establishment of laboratories in different C&I domains

c) Guidance on the framework and procedures to establish MRAs

d) Case studies on C&I regimes established at national, regional or global levels

e) Development of a methodology for assessing the status of C&I regimes in place in the regions (or subregions)

f) Experience-sharing and case study reports on C&I implementation of programmes

g) Best practices and guidelines including methodologies to combating counterfeit and mobile device theft

h) Experience-sharing and case study reports on combating counterfeit and mobile device theft.

# 4 Timing

4.1 Annual progress reports will be submitted to ITU‑D Study Group 2.

4.2 A final report will be submitted to ITU‑D Study Group 2.

# 5 Proposers/sponsors

United States; Algérie Télécom; Arab States.

# 6 Sources of input

1) Member States, Sector Members and relevant experts.

2) Examination of regulations, policies and practices in countries that have created systems to manage these matters.

3) Other relevant international organizations.

4) Interviews, existing reports and surveys should also be used to gather data and information for the finalization of a comprehensive set of best-practice guidelines for administering C&I information. Material from regional telecommunication organizations, telecommunication research centres, manufacturers and working groups should also be utilized in order to avoid duplication of work. Close cooperation with ITU‑T study groups, in particular Study Group 11 and the Joint Coordination Activity on C&I testing (JCA-CIT), and with other organizations (e.g. ILAC, IAF, ISO, IEC) involved in conformance and interoperability activities and other actions within ITU‑D is required and extremely important.

# 7 Target audience

| Target audience | Developed countries | Developing countries[[8]](#footnote-9)1 |
| --- | --- | --- |
| Telecom policy-makers | Yes | Yes |
| Telecom regulators | Yes | Yes |
| Service providers/operators | Yes | Yes |
| Manufacturers | Yes | Yes |
| Consumers/end-users | Yes | Yes |
| Standards-development organizations, including consortia | Yes | Yes |
| Testing laboratories | Yes | Yes |
| Certification bodies | Yes | Yes |

a) Target audience

Depending on the nature of the output, policy- and decision-makers, middle- to upper‑level managers in operators, laboratories, SDOs, certification bodies, market-research agencies, regulators and ministries in developed, developing and least developed countries will be the predominant users of the output. Compliance managers at equipment manufacturers and system integrators could also use the output for information.

b) Proposed methods for implementation of the results

The results of the Question are to be distributed through ITU‑D interim and final reports. This will provide a means for the audience to have periodic updates of the work carried out and a means for the audience to provide input and/or seek clarification/more information from ITU‑D Study Group 2 should they need it.

# 8 Proposed methods of handling the Question or issue

The Question will be addressed within a study group over a four-year study period (with submission of interim results), and will be managed by a rapporteur and vice‑rapporteurs. This will enable Member States and Sector Members to contribute their experiences and lessons learned with respect to conformity assessment, type-approval and interoperability.

# 9 Coordination

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

– Relevant ITU‑T study groups, particularly Study Group 11

– Relevant focal points in BDT and ITU regional offices

– Coordinators of relevant project activities in BDT

– Standards-development organizations (SDOs)

– Conformity-assessment bodies (including testing organizations and laboratories, accreditation organizations, etc.) and industry consortia

– Consumers/end users

– Experts in this field.

# 10 BDT programme link

a) WTDC Resolution 47 (Rev. Dubai, 2014)

b) WTSA Resolution 76 (Rev. Hammamet, 2016)

c) WTSA Resolution 44 (Rev. Hammamet, 2016)

d) C&I Action Plan Pillars 3 and 4 (Council Document C13/24(Rev.1))

Links to BDT programmes aimed at human-capacity development and assistance to operators in developing and least developed countries, programmes that deal with technical assistance and programmes concerning conformance and interoperability.

# 11 Other relevant information

As may become apparent within the life of this Question.

QUESTION 5/2

# Best practices and guidelines for utilizing telecommunications/ICTs for disaster management

# 1 Statement of the situation or problem

## 1.1 Context

a) Recent natural and man-made disasters, which remain of critical concern to Member States

b) The longstanding role of ITU in supporting the use of telecommunications/ICTs for the purpose of disaster preparedness, mitigation, response and recovery

c) The value of collaborating and sharing experiences, both regionally and globally, in order to support national and regional preparedness

d) The excellent results of the work of Question 22-1/2 and Question 5/2 in the past study period, including the compilation of numerous case studies development of an online toolkit and Handbook on Emergency Telecommunications, and development the report of ICT experiences and best practices in disaster mitigation and relief and check list for emergency telecommunication.

e) Especially, in Question 5/2 over the last study cycle from 2014 – 2017, multiple aspects of disaster communications planning, management, and response including country case studies in disaster early warning and response, examples of technologies, applications, checklists and tools to support disaster management, resilience and redundancy, and disaster communications plans and frameworks.

f) Technology progress for the various sensors, new technologies for warning or prediction of the disasters such as landslides, mudslides, debris flows, floods, natural dam breakdown of glacier lakes, earthquakes, cyclone, volcanic explosion, and data analysis methodologies.

## 1.2 Background texts

a) The WSIS Action Lines and UN Sustainable Development Goals (SDGs) further recognize the need to reduce the risk of disasters and build sustainable and resilient infrastructure.

b) WTDC Resolution 34 (Rev. Dubai, 2014), on the role of telecommunications/ICT in early warning and mitigation of disasters, as well as to support humanitarian assistance

c) the Tunis Agenda for the Information Society, § 91 b) and c), which recognizes and identifies many important elements that need to be addressed in the application of telecommunications in the area of disaster prediction, detection and mitigation

d) Resolution 646 (Rev. WRC-12) of the World Radiocommunication Conference (WRC), on the radiocommunication aspects of public protection and disaster relief

e) Resolution 36 (Rev. Guadalajara, 2010) of the Plenipotentiary Conference, on telecommunications/ICTs in the service of humanitarian assistance

f) Resolution 136 (Rev. Guadalajara, 2010) of the Plenipotentiary Conference, on the use of telecommunications/ICTs for monitoring and management in emergency and disaster situations, and for early warning, prevention, mitigation and relief

g) WRC Resolution 644 (Rev. WRC-12), on radiocommunication resources for early warning, disaster mitigation and relief operations

h) WRC Resolution 647 (Rev. WRC-12), on spectrum-management guidelines for emergency and disaster relief radiocommunications

i) WRC Resolution 673 (Rev. WRC-12), on radiocommunications for Earth observation applications, such as for prediction of disasters and monitoring of the effects of climate change.

## 1.3 Further provisions

a) Resolution ITU‑R 53-1 (Rev. Geneva, 2012) of the Radiocommunication Assembly (RA), which relates to a database of frequencies for use in emergency situations maintained by the Radiocommunication Bureau

b) RA Resolution ITU‑R 55-1 (Geneva, 2012), which relates to guidelines for management of radiocommunications in disaster prediction, detection, mitigation and relief, collaboratively and cooperatively, within ITU and with organizations external to the Union

c) Recommendation ITU‑D 13-2, which recommends that administrations include the amateur services in their national disaster plans, reduce barriers to effective use of the amateur services for disaster communications, and develop memoranda of understanding (MoU) with amateur and disaster relief organizations

d) Recommendation ITU‑R M.1637, which offers guidance to facilitate the global circulation of radiocommunication equipment in emergency and disaster relief situations

e) Report ITU‑R M.2033, which contains information on some bands or parts thereof which have been designated for disaster relief operations

f) Recommendations ITU‑T E.106 (International Emergency Preference Scheme for Disaster Relief Operations) and ITU‑T E.107 (Emergency Telecommunications Service (ETS) and Interconnect Framework for National Implementations of ETS Numbering), which relate to use of public telecommunications by national authorities in emergency and disaster relief operations.

g) Recommendation ITU-T L.392 (Disaster management for improving network resilience and recovery with movable and deployable information and communication technology (ICT) resource units), which contains an approach to improve network resilience against disasters.

h) Recommendation ITU-T E.108 (Requirement for disaster relief mobile message service), which specifies requirements for a disaster relief mobile message service to save victim’s life.

## 1.4 Aspects to be considered

a) The complementary work being undertaken by BDT programme(s) and regional offices to provide assistance on disaster communications/emergency telecommunications assistance to ITU Member States

b) The activities of the Intersectoral Emergency Telecommunications Team, an internal ITU secretariat mechanism to ensure coordination across all the secretariat's activities for emergency telecommunications

c) The role of ITU Sector Members and relevant international, regional and non-governmental organizations in providing telecommunication/ICT equipment and services, expertise and capacity-building assistance to support disaster relief and recovery activities throughout the world, particularly through the ITU Framework for International Cooperation in Emergencies (ICE)

d) The ongoing work of the United Nations Working Group on Emergency Telecommunications (WGET), in which ITU participates, to facilitate the use of telecommunications/ICTs in the service of humanitarian assistance

e) The ongoing work of the International Maritime Organization (IMO), the International Civil Aviation Organization (ICAO) and ITU related to search and rescue and distress alerting that may be applicable to disaster communications management frameworks

f) Publications, workshops and forums facilitated by ITU's work on utilization of telecommunications/ICTs for disaster preparedness, mitigation, response and recovery including emergency communications provide information to enhance the preparedness, mitigation, and relief capacities of ITU Member States

g) Developing countries continue to require support in development of disaster communications management expertise

h) ITU-D Objective 5, in coordination with the regional offices and ITU‑D Study Group 2, can continue to assist and guide developing countries in building comprehensive disaster-management plans, setting up early-warning centres, addressing climate‑change adaptation, and promoting regional and international cooperation in the time of disasters through coordinated efforts

i) Moreover, ongoing or planned telecommunication/ICT development projects can often be leveraged to address emergency communications requirements and to support relief and recovery operations

j) Furthermore, there is a need for additional information on the effective use of telecommunications/ICTs for disaster preparedness, mitigation, response and recovery, including consideration of how existing systems and infrastructures can be integrated into disaster-management frameworks, how to facilitate rapid deployment of systems and services following a disaster, and how to help ensure redundancies and resiliency of networks and infrastructures from the effects of natural disasters.

k) Considering promising technologies such as bigdata analytics, Internet of things (IoT) and software defined networking (SDN), there is also a need for collecting information on effective use for early warning and disaster relief, in order to facilitate effective deployment of network using promising technologies.

# 2 Question or issue for study

2.1 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 and relief, including consideration of best practices/guidelines for implementation, and in ensuring a favourable regulatory environment to enable rapid deployment and implementation of relevant technologies.

2.2 Continue gathering national experiences and case studies in disaster preparedness, mitigation and response, and in the development of national disaster communications plans, and examine common themes between them.

2.3 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.

2.4 Examine and gather national and regional experience in implementation of Early Warning Systems for disaster risk reduction, including safety confirmation

2.5 Examine and gather national and regional experience in planning of disaster relief and emergency communications, and implementation of disaster communications exercises and drills

2.6 Examine the enabling policy environment for more resilient communications networks and for deployment of emergency communications systems

2.7 Develop best practices for the elaboration of national and regional disaster-management plans or frameworks for the use of telecommunications/ICTs in natural and man-made disaster and/or emergency situations, working in coordination with the relevant BDT programmes, regional offices and other partners.

2.8 Continue updating the online toolkit with relevant information and materials collected during the study period.

# 3 Expected output

The expected output will be a report or reports on the results of the work conducted for each step above, together with one or more Recommendations, as appropriate. Outputs may also include regular updates to the online toolkit, and the development of any additional tools or guidelines to support the implementation of telecommunications/ICTs for utilization of telecommunications/ICTs for disaster preparedness, mitigation, and response and recovery.

Succinct outputs summarizing case studies and capturing lessons learned, best practices, and tools/templates will be prepared and presented to the Study Question for approval annually. The focus will be on both technology examples and also deployment case studies of new and emerging systems and applications for disaster communications and response.

# 4 Timing

4.1 Annual progress reports should be submitted to ITU‑D Study Group 2.

4.2 Best practices and country experiences in planning, exercising and deploying early warning systems for disaster risk reduction, including safety confirmation.

4.3 Guidelines for preparing and conducting disaster communications exercises and drills and for assessing and updating plans, policies, and procedures based on lessons learned.

4.4 Best practices regarding the enabling policy environment for deployment of emergency communications systems.4.5 Draft final reports and any proposed draft Recommendations/guidelines should be submitted to ITU‑D Study Group 2 within four years.

4.6 The rapporteur's group will work in close collaboration with relevant BDT programme(s), regional offices, regional initiatives and relevant ITU‑D Questions, and ensure proper liaison with ITU‑R and ITU‑T.

4.7 The activities of the rapporteur's group will come to an end within four years.

# 5 Proposers/sponsors

The new text for this revised Question stems from the final report of Study Group 2 for 2014-2017.

# 6 Sources of input

Contributions are expected from Member States, Sector Members and Associates, as well as inputs from relevant BDT programme(s) and relevant ITU‑R and ITU‑T study groups, and any relevant ITU‑D Question. International and regional organizations responsible for utilization of telecommunications/ICTs for disaster management are encouraged to provide contributions related to experiences and best practices. The intensive use of correspondence and online exchange of information is encouraged for additional sources of inputs.

# 7 Target audience

a) Target audience

Depending on the nature of the output, middle to upper‑level managers in operators and regulators in developed and developing countries will be the predominant users of the outputs.

| Target audience | Developed countries | Developing countries[[9]](#footnote-10)1 |
| --- | --- | --- |
| Telecom policy-makers | Yes | Yes |
| Telecom regulators | Yes | Yes |
| Service providers/operators | Yes | Yes |
| Manufacturers | Yes | Yes |

b) Proposed methods for implementation of the results

The results of the Question are to be distributed through ITU‑D reports, or as agreed during the study period in order to address the Question for study.

# 8 Proposed methods of handling the Question

The Question will be addressed within a study group over a four-year study period (with submission of interim results), and will be managed by a rapporteur and vice‑rapporteurs. This will enable Member States and Sector Members to contribute their experiences and lessons learned with respect to emergency communications.

# 9 Coordination

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

– Relevant ITU‑D Question(s)

– Relevant BDT programme(s)

– Regional offices

– Relevant ITU‑R and ITU‑T study groups

– Working Group on Emergency Telecommunications (WGET)

– Relevant international, regional and scientific organizations with mandates relevant to this Question.

# 10 Other relevant information

As may become apparent within the life of this Question.

QUESTION 6/2

**Best practices and guidelines for ICT-enabled climate action**

QUESTION 7/2

**Best practices and guidelines for the measurement and assessment of human exposure to electromagnetic fields**

QUESTION 8/2

**Best practices and guidelines for managing e-waste and protecting the environment in a cost-effective manner**

QUESTION 9/2

**Key topics and issues that shape the future of telecommunications/ICTs, taking into account the results of the study in ITU‑T and ITU‑R, and the priorities of developing countries**

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1. 1 These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition. [↑](#footnote-ref-2)
2. 1 These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition. [↑](#footnote-ref-3)
3. 1 These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition. [↑](#footnote-ref-4)
4. 1 These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition [↑](#footnote-ref-5)
5. 1 These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition. [↑](#footnote-ref-6)
6. 1 These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition. [↑](#footnote-ref-7)
7. 1 These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition. [↑](#footnote-ref-8)
8. 1 These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition. [↑](#footnote-ref-9)
9. 1 These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition. [↑](#footnote-ref-10)