**MOD** ACP/22A7/13

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[[1]](#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.

1. 1 These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition. [↑](#footnote-ref-10)