

## **Terms of Reference for ITU-T Focus Group on Disaster Relief Systems, Network Resilience and Recovery (FG-DR&NRR)**

### **1. Scope**

The Focus Group (FG), established in accordance with Recommendation ITU-T A.7, conducts the work on disaster relief systems/applications, network resilience and recovery aiming at

- identifying requirements for disaster relief and network resilience and familiarize the ITU-T and standardization communities with those requirements;
- identifying existing standards and existing work that are related to the requirements mentioned above;
- identifying any additional standards that may need to be developed and identifying future work items for specific ITU-T Study groups and related actions;
- encouraging collaboration among ITU-T Study Groups, in particular SG2, SG5, SG11, SG13, SG15, SG16 and SG17, ITU-R, ITU-D and relevant organizations and communities, including the PCP-TDR;

The Focus Group will collaborate with worldwide relevant communities (e.g., research institutes, forums, and academia) including other SDOs and consortia.

### **2. Rationale**

According to the communiqué containing recommendations of the October 2011 Chief Technology Officer (CTO) Group meeting, ITU-T was called upon urgently to study the development of standards for disaster relief systems for individuals and for guidance and to establish a Focus Group to advance work on this critical subject, including the recovery and resilience of network infrastructure.

Indeed, recent events have underscored the need for standards in such areas.

ITU-T SG2 is progressing the work on Telecommunication for Disaster Relief/Early Warning as the Lead Study Group. This includes work on special treatments mainly for PSTN and other telephone systems under a crisis situation causing an increased demand for telecommunications when use of the International Telephone Service may be restricted due to damage, reduced capacity, congestion or faults. In crisis situations there is a requirement for ITU-T E.106 International Emergency Preference Scheme (IEPS), where users of public telecommunications to have preferential treatment. In addition, there is an activity in ITU-T SG2 defining a service entitled “Requirements for Land Mobile Alerting Broadcast Capabilities for Civic Purposes”, with an associated activity for an identification scheme for the service “Guidelines to select Message Identifiers for Land Mobile Alerting Broadcast Capabilities for Civic Purposes”. SG2 also is responsible for Human Factors and is responsible for the ITU-T Joint Coordination Activity on Accessibility and Human Factors (JCA-AHF), which liaises with all other ITU-T study groups on accessibility and human factor matters.

ITU-T SG5 works on providing guidance on ways to improve resilience of networks in case of disaster situations.

ITU-T SG11 has approved supplements to the series Q recommendation on signaling requirements to support the emergency telecommunications service (ETS) in IP networks and on the evaluation of signaling protocols to support ITU-T Y.2171 admission control priority levels.

ITU-T SG13 works on implementation framework related to provision of emergency telecommunications in next generation networks (including ubiquitous network environments) (Question 5/13). Recommendation ITU-T Y.2205 (Next Generation Networks – Emergency

telecommunications - Technical considerations) and Y.1271 (Framework(s) on network requirements and capabilities to support emergency telecommunications over evolving circuit switched and packet-switched networks) have been developed.

ITU-T SG15 is progressing the work on network resiliency and recovery such as network protection and restoration (e.g., in Q2/15, Q9/15 and Q17/15).

ITU-T SG16 has approved Recommendations ITU-T H.460.4, H.246, H.460.14, H.248.1 v3, H.248.44 and Supplement 9 to the H-Series Recommendations on prioritization of calls for the ITU-T E.106 IEPS and ITU-T E.107 Emergency Telecommunication Services (ETS). ITU-T H.460.21 provides a mechanism for broadcast of ITU-T X.1303 CAP alert messages in H.323 systems. Provisions for the need to support emergency alerts are specified in ITU-T Recommendations for IPTV and Digital Signage. Further, SG 16 is the Lead Study Group on telecommunication/ICT accessibility for persons with disabilities and the parent of the ITU-T Focus Group on Audiovisual Media Accessibility (FG AVA). Accessibility to information in preparation for and during emergency situations for persons with disabilities and those persons with language impairments (unable to understand the local language) is an important area of study. The adoption of existing standards needs to be promoted, as well as definition of new ones where gaps are identified.

ITU-T SG17 has approved Recommendation ITU-T X.1303 on the Common Alerting Protocol (CAP). CAP is a simple but general format (which can be encoded in either ASN.1 or XML) for exchanging all hazard emergency alerts and public warnings over all kinds of networks. Designing in network resilience and recovering from disasters are similar to the designing in network security and recovering from security breaches. Synergies in approaches can be leveraged.

However, it is felt that two important areas may have not been addressed: (1) disaster relief for individuals (to notify the damage situation from victims to their relatives, friends, or employers) and (2) disaster relief guidance (to show victims the routes to evacuation shelters, home, etc.).

In addition, it was felt that the issues of network resilience and recovery of infrastructure following disasters are important and that there is need to identify all standardization requirements and issues in these areas (which may go beyond current work).

Indeed large scale damage could happen on a telecommunication network by a disaster, new methods and/or new network architecture might be necessary for improving network resilience and recovery capability to cope better with a disaster. Different types of disasters may require different solutions (e.g. ad-hoc networking, delay-tolerant networking).

To consider the systems for disaster relief which contain wireless communications, coordination and collaboration with ITU-R is important. And collaboration with ITU-D is important in light of the ITU-D programs related to disaster relief.

### **3. FG objective**

The objective of the Focus Group is to collect and document information and concepts that would facilitate the work on:

- Disaster relief systems and/or applications from a telecommunication/ICT perspective, and
- Improved network resilience and recovery capability which could better cope with a disaster.

### **4. Relations within and outside ITU-T**

The FG will work in close collaboration with all concerned ITU-T study groups, for instance on the coordination of respective work programmes in order to avoid duplication and overlap of work, and on the coordination of seminars and workshops according to Recommendation ITU-T A.31. With

regard to accessibility and human factors, it is important to communicate with ITU-T Study Group 16 and the ITU-T JCA-AHF.

The FG should also cooperate and coordinate its work with the other ITU sectors (ITU-R, ITU-D), and with other relevant bodies outside ITU-T (universities, research institutes, SDOs, forums/consortia, regulators, policy-makers) in accordance with Recommendation ITU-T A.7.

## **5. Specific tasks and deliverables**

Main areas of work of the Focus Group are:

- To liaise with other groups, in particular ITU-T study groups, to identify what is being done, and potential gaps or areas where additional work might be required.
- To consider specific topics such as: systems and/or applications for (1) disaster relief for individuals (to notify the damage situation from victims to their relatives, friends, and employers), (2) disaster relief guidance (to show victims the routes to evacuation shelters, home, etc.), (3) disaster notification, (4) special treatment for emergency communication, (5) public protection and disaster relief (PPDR) and public safety mobile networks, (6) power supply in disaster situations (e.g., for mobile base station or other network equipment) , and (7) aspects for persons with disabilities (accessibility) and older persons (human factors).
- To identify methods and/or network architecture aspects for improving network resilience and recovery capability related to coping better with disaster situations.

To progress the work in the areas above and to develop deliverables as appropriate, the Focus Group will conduct the following tasks related to its scope:

- Develop and maintain a living list of standards bodies, forums, and consortia dealing with telecommunication/ICT aspects, including information concerning their activities and documents
- Gather relevant new ideas and identify potential study areas
- Identify different types of disasters and develop use cases of services and reference models for telecommunication/ICT, considering both technical solutions and best management practices.
- Develop and maintain terminology and taxonomy
- Carry out an analysis of communications networking requirement functions and capabilities (including QoS/QoE, security and reliability)
- Perform a gap analysis of standards for communications networking
- Develop a roadmap to guide further developments of relevant ITU-T Recommendations

## **6. Parent group**

The parent group is TSAG.

## **7. Leadership**

See clause 2.3 of Recommendation ITU-T A.7.

## **8. Participation**

See clause 3 of Recommendation ITU-T A.7. A list of participants will be maintained for reference purposes and reported to the parent group.

## **9. Administrative support**

See clause 5 of Recommendation ITU-T A.7.

## **10. General financing of the FG**

See clauses 4 and 10.2 of Recommendation ITU-T A.7.

## **11. Meetings**

The frequency and location of meetings will be determined by the Focus Group and the overall meetings plan should be announced as soon as possible. The Focus Group should use remote collaboration tools to the maximum extent, and collocation with existing meetings (e.g., study groups and research activities). The meetings will be announced by electronic means (e.g., e-mail and website, etc.) at least 4 weeks in advance.

## **12. Technical Contributions**

Technical contributions are to be submitted at least 10 calendar days before the meeting takes place unless otherwise determined by the Focus Group.

## **13. Working language**

The working language is English.

## **14. Approval of deliverables**

Approval of deliverables will be taken by consensus.

## **15. Working guidelines**

Working procedures will follow the procedures of Rapporteur meetings. No additional working guidelines are defined.

## **16. Progress reports**

See clause 11 of Recommendation ITU-T A.7.

## **17. Announcement of Focus Group formation**

The formation of the Focus Group will be announced by TSAG via ITU publications and other means, including communication with the other organizations and/or experts, technical journals and the World Wide Web.

## **18. Milestones and duration of the FG**

The Focus Group lifetime is as specified in 2.2 of Recommendation ITU-T A.7.

The following milestones are proposed:

- Holding of the first Focus Group meeting (middle of 2012)
- Presentation of the deliverables as identified in clause 5 at the TSAG meeting 4-7 June 2013

## **19. Patent policy**

See clause 9 of Recommendation ITU-T A.7

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