



# Update on Telecommunications for Disaster Relief, Mitigation, and Early Warning in the ITU-T

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# Outline

- ITU-T Action Plan for Standardization on Telecommunications for Disaster Relief and Early Warning (TDR/EW)
- Background on work in ITU-T Study Groups
- Background of Work in SG2 including PCP-TDR
- Issues
- Plans for Future Work



# Telecommunications Saves Lives

- Following the Indian Ocean tsunami of 26 December 2004, the fact was made evident that the current state of TDR and specifically, EW was woefully inadequate to meet the humanitarian needs
- It was also apparent that EW and an appropriate TDR infrastructure to support “Last Mile” communications could have contributed significantly to the saving of human lives



# TDR Action Plan

- In March 2005, TSAG established an ITU-T Action Plan for Standardization on Telecommunications for Disaster Relief and Early Warning (TDR/EW), which has been updated based on feedback provided by the ITU-T Study Groups.
- The creation of the plan was motivated by the identification of the need for new telecommunication standards following the Indian Ocean tsunami of December 2004, and proposals made to the TSAG meeting.



# Results of TSAG Recommendations

- [SG 2](#) to coordinate this work
- to encourage all ITU-T Study Groups to increase their activities in the definition of Recommendations and other materials (e.g. Handbooks) for Telecommunications for Disaster Relief and Early Warning according to their mandate; and
- the establishment of an ITU-T Action Plan for Telecommunications for Disaster Relief and Early Warning that should also be shared with and enhanced by the ITU-T Study Groups.



## draft *ITU-T Action Plan for Standardization on Telecommunications for Disaster Relief and Early Warning (TDR/EW)*

- [ITU-T Study Group 4](#) has developed requirements specification for ETS modeled closely after GETS
- [ITU-T Study Group 9](#) has developed requirements for preferential telecommunications over IP-Cablecom networks and is developing specifications for preferential telecommunications over IP-Cablecom networks. Additionally, it will study if additional work is possible in this area.
- [ITU-T Study Group 11](#) has developed BICC and ISUP support for IEPS priority mechanism defined in E.106 (2000) and has approved amendments that extend that support to the 2003 revision of E.106. Additionally, SG 11 intends to include the support for TDR/EW in the signalling and control protocols required to support FGNGN requirements.
- [ITU-T Study Group 12](#) reported that while it has no specific study items directly related to TDR/EW, it has substantial expertise in communication quality and would be pleased to provide advice as needed on its areas of expertise.
- [ITU-T Study Group 13](#) has ongoing work on emergency telecommunication. A framework Recommendation on requirements and capabilities for network to support emergency telecommunications was approved during the last study period. There is additional work in progress to consider enabling emergency telecommunications in an NGN environment.
- [ITU-T Study Group 15](#) has worked on Automatically Switched Optical Network (ASON) specifications, which by its own nature allow routing around major network failures and hence are directly applicable to TDR/EW scenarios by the definition of appropriate local policies for affected network elements (for example, by forcing existing calls to be dropped to free network resources then using call admission control to limit network access).
- [ITU-T Study Group 16](#) has developed support for priority mechanisms over H.323 IP-based multimedia systems and started a new work item for message broadcast in H.323 that can be used for EW scenarios.
- [ITU-T Study Group 17](#) identified three topics that relate to network security that are relevant to TDR/EW telecommunications scenarios: (a) Security Architecture and Secure Communications System; (b) Security Management; and (c) Security Incident/Event Handling. There are several Recommendations under SG 17 – existing and under development – that address these areas.
- [ITU-T Study Group 19](#) addressed emergency services in a supplement for requirements for IMT-2000 networks and is preparing a chapter on the subject for the second edition of the *Handbook on Deployment of IMT-2000 Systems*.
- ITU-T Study Groups 4, 9, 11, 12, 16, 17 and 19 are ready to cooperate with [Study Group 2](#) within their areas of expertise, including in the organization of a future workshop on telecommunications standardization for TDR/EW.



# Related Recommendation from the ITU-T

- [ITU-T Rec. E.106](#), "International Emergency Preference Scheme for disaster relief operations (IEPS)"
- [ITU-T Rec. H.460.4](#), "Call priority designation for H.323 calls"
- [ITU-T Rec. H.460.14](#), "Support for Multi-Level Precedence and Preemption (MLPP) within H.323 Systems"
- [ITU-T Rec. J.260](#), "Requirements for Emergency/Disaster Communications over IP/Cablecom Networks"
- [Draft New ITU-T Rec. J.pref](#), "Specifications for Emergency/Disaster Communications over IP/Cablecom Networks" (work in progress)
- Draft New [ITU-T Rec. H.460.MB](#), "Message Broadcast for H.323 Systems" (work in progress)
- [ITU-T Rec. M.3350](#), "TMN service management requirements for information interchange across the TMN X-interface to support provisioning of Emergency Telecommunication Service (ETS)"
- [Supplement 47 to ITU-T Q-series Recommendations](#), "Emergency services for IMT-2000 networks – Requirements for harmonization and convergence"
- [ITU-T Rec. Y.1271](#), "Framework(s) on network requirements and capabilities to support emergency communications over evolving circuit-switched and packet-switched networks"
- Signalling for IEPS support in ISUP: [Q.761 Amd.3](#), [Q.762 Amd.3](#), [Q.763 Amd.4](#), and [Q.764 Amd.4](#)
- Signalling for IEPS support in BICC: [Q.1902.1 Amd.2](#), [Q.1902.2 Amd.3](#), [Q.1902.3 Amd.3](#), and [Q.1902.4 Amd.3](#)
- Signalling for IEPS support in DSS2: [Q.2931 Amd.5](#)
- Signalling for IEPS support in ATM AAL2: [Q.2630.3 Amd.1](#)
- Signalling for IEPS support in CBC: [Q.1950 Amd.1 Annex G](#)
- [Q-Series Supplement 53](#) "Signalling support for International Emergency Preferential Scheme (IEPS)"
- Draft New [ITU-T Rec. Y.NGN-ET-Tech](#) "Next Generation Networks - Emergency Telecommunications – Technical Issues" (work in progress)



# Background in Work in SG2

- Operational aspects of service provisioning, networks and performance
- SG2 appointed lead Study Group for ITU-T for coordinating all work within the ITU for TDR, DM, and EW
- Through its work on [standardization](#), ITU develops technical standards (known as Recommendations) that facilitate the use of public telecommunication services and systems for communications during emergency, disaster relief and mitigation operations. In such circumstances, technical features need to be in place to ensure that users who must communicate at a time of disaster have the communication channels they need, with appropriate security and with the best possible quality of service.





# E.106 International Emergency Preference Scheme

An important achievement by Study Group 2 in the field of Telecommunication for Disaster Relief was the March 2000 approval of [ITU-T Rec. E.106](#), "*International Emergency Preference Scheme (IEPS) for disaster relief operations*". The Recommendation, updated in October 2003, describes a scheme for the use of public telecommunications by national authorities in emergency and disaster relief operations. The IEPS is needed when there is 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 IEPS users of public telecommunications to have preferential treatment.



# TDR Studied in Conjunction with Service Definition and Numbering

Within [ITU-T SG 2 Question 1](#) "*Application of Numbering, Naming, and Addressing Plans for telecommunications and Service and Operational aspects of numbering, including service definition*" an extensive list of projects address studies related to numbering, naming and addressing capabilities. With the continuing growth in new public services, networks, and capabilities, the list of projects is not expected to diminish and numerous new telecommunications services require unique numbering, naming and addressing capabilities that have been developed by this question. This include the Telecommunication for Disaster Relief (TDR) service, which is principally studied in [project 5](#) "*Global evolution of naming, numbering and addressing requirements for telecommunications services*" and [project 14](#) "*Service and Operational aspects of numbering and related service definition issues*". Those projects aim to finalize the Recommendations E.ETS and E.TDR by 2006.



# Latest Results

- The May 2006 SG 2 meeting, stabilized the text and determined new draft Recommendation **E.ETS** "*Emergency Telecommunications Service (ETS) and Interconnect Framework for National Implementations of ETS*".
- The draft Recommendation **E.ETS**, which has been Determined as **E.107**, provides guidance that will enable telecommunications between one ETS National Implementation (ENI) and another ENI, in addition to providing a description of ETS. It considers a potential for bilateral/multi-lateral agreement between cooperating countries/Administrations to link their respective ETS systems.
- Study Group 2 continues work to define services for telecommunications for disaster relief (TDR) and other Recommendations will be developed in response to contributions.



## Latest Results (cont.)

- The creation of the PCP-TDR was proposed at the February 2003 ITU-T workshop on Telecommunications for Disaster Relief (TDR), endorsed by TSAG in its February 2003 meeting, and approved by [ITU-T Study Group 16](#) in May 2003. After WTSA-04, PCP-TDR is under the responsibility of [ITU-T Study Group 2](#).



# Partnership Coordination Panel

- Created to ensure that key players are involved in defining and meeting the requirements for telecommunications for disaster relief, here included early warning. Participation is open to international telecommunication service providers, related government departments, standards development organizations, disaster relief organizations, and other entities working in the field.
- The first meeting of the PCP-TDR held in Geneva on 2 May 2006
- Meeting Report available at <http://ftp3.itu.int/pcptdr/meetings/0605-Geneva/>
- Documented in [TSB Circular 173](#): "Creation of the Partnership Co-ordination Panel in support of standardization on Telecommunications for Disaster Relief (TDR/PCP)"



# PCP-TDR Members

- ITU-T: SG2, SG4, SG11, SG13, SG16, and other SGs on request
- ITU-R: SG8, and others on request
- ITU-D: SG1, SG2
- SDOs: ISO/IEC, APT, ATIS T1, ETSI, IETF, OASIS, TIA, and others
- Intergovernmental Organizations: UN-OCHA, UNHCR, UNICEF, WFP, WHO, and others
- NGOs: IFRC, ICRC, TSF, CAESA and others
- [EMTEL – Emergency Communications \(ETSI\)](#)
- [Project MESA \(ETSI/TIA\)](#)
- [TIA Engineering Committee TR-8 - Mobile and Personal Private Radio Standards](#)
- [TR-45 Mobile and Personal Communications Systems Standards](#)



# Significant Issues

- Lack of D-Sector representation and interest means that those who need it most, are not engaged in the delivery processes
- Coordination amongst International entities is woefully missing due to the stovepipes in the management of these International Agencies
- R-Sector has the key delivery components but has little service provider support (unrecoverable costs)



# Future Plans for PCP-TDR

- Next Workshop is Planned in Geneva on 19-20 October, 2006 in Association with OASIS
- Global Numbering to Support TDR (Define Services behind the Reservation)