FINAL REPORT

Telecommunications for Disaster Relief
17-19 February 2003
Geneva

Contents

Summary

The Workshop on Telecommunications for Disaster Relief that took place in Geneva from 17 to 19 February 2003 convened by TSB Circular 134 (22 November 2002) and was prepared with the joint efforts of ITU-T Study Groups 2 and 16 with the overall objectives to:

- Examine potential ETS capabilities operations and requirements that may need to be standardized.

- Improve the understanding of user requirements (e.g. governmental and international aid/humanitarian organisations).

- Provide an overview of technical work planned and underway.

- Examine and summarize the legal, regulatory and policy aspects associated with TDR.

- Prepare an action list for standardization and project management across ITU-T Study Groups.

ITU-T aims to develop Recommendations that describe and define a telecommunication capability that will facilitate the use of public telecommunication services and systems by authorities for communications during emergency and disaster relief operations, so called "Telecommunications for Disaster Relief"(TDR). This capability will enable authorized users organizing and coordinating disaster relief operations to have preferential treatment for their communications via the public telecommunic ations networks. Preferential treatment is particularly important because during disaster events public telecommunication networks often experience infrastructure damage, which combined with high traffic demands causes severe congestion and overload situations.

The TDR workshop was developed in response to a requirement identified at the June 2002 meeting of TSAG to make all ITU members aware of this area of work. The participation of the user community and of other SDOs was sought so that work could proceed on the basis of a broad perspective of overall requirements and activities in progress.

Information and background information was posted on the ITU-T website (http://www.itu.int/ITU-T/worksem/ets/index.html) which also contains the papers presented, and a web casting recording of the presentations. This summary report has also been posted on the above mentioned website.

Eighty-three participants from 28 different countries attended the Workshop. Thirteen developing countries were represented in this event.

The workshop opened with addresses by representatives of the three ITU sectors. After the opening session, one long session on User's Perspectives was organized, followed by a panel. The second and third days concentrated on technical perspectives, and the third day closed with an overall panel, where the user and technical perspectives expressed were brought together. The titles of these sessions were:

- TDR Requirements & Considerations

- ITU Work on TDR

- TDR Requirements Definition

- TDR Interworking Requirements

- TDR Network Aspects

- TDR Multimedia Communications

- TDR Performance and Security Considerations

- Panel Discussion of TDR Aspects and Issues

The key findings were presented at a closing session, which will be followed up by ITU-T Study Groups 2 and 16 in their ongoing work.

This report contains five annexes. The Programme of the Workshop is presented in Annex A. The outcome of the discussions and conclusions is given in Annex B. The Actions proposed are given in Annex C. The results of the Workshop attendees evaluation are given in Annex D. Finally, the list of members of the Steering Committee is given in Annex E.

<div align="center">

Annex A:

**Programme of the Workshop on
Telecommunications for Disaster Relief**

</div>

Day 1	Monday 11th February 2003

Opening Session (AM)	

09:30 – 10:30	Opening addresses: ITU-T – Mr H. Zhao, Director of TSB
	                                    ITU-R – Mr K. Hughes, Head of the BR Study Group Department, on behalf of Mr. V. Timofeev, Director of BR
	                                    ITU-D – Mr H. Toure, Director of BDT
	
	Workshop purpose & scope: Overview and Objectives – Mr R. Blane, Deputy Chair ITU-T SG2, UK

10:30 – 11:00	Coffee-break

Session 1	**TDR Requirements and Considerations**
11:00 – 12:30	Topics: - Telecommunications for Disaster Relief in Canada: Mr J. Skora, Industry Canada - NATO Civil Communications Planning: Mr H. de Vries, NATO CCPC - National Coordination Center, USA: Mr H. Folts, Mr B. Farrel, NCS, USA - UNHCR: Mr J. Rushby *Session Chair: Mr P-A Probst, Chair ITU-T SG 16, Switzerland*

12:30 – 14:00	Lunch

Session 1 (PM.)	**TDR Requirements and Considerations (Continued)**
14:00 – 15:45	Topics: - Communications for Decision-making in Disaster Management: Mr H. Zimmermann, UN WG on Emergency Telecom (WGET) - Requirements on Telecommunications for Disaster Relief from the International Federation of Red Cross and Red Crescent Societies: Mr J-P. Lucot, IFRCC - The need for bandwidth management and QoS control when using public or shared networks for disaster relief work: Mr S. Fazio, UNICEF - Télécom Sans Frontières: Ms A. Bernard Sessa. *Session Chair: P-A Probst Chair ITU-T SG 16, Switzerland*

15:45 – 16:15	Coffee-break

Session 2	**Panel Discussion**
16:15 – 17:30	Presenters from Session 1 *Chair: Mr R. Blane, Deputy Chair ITU-T SG2, UK*

Day 2	**Tuesday 18th February 2003**

Session 3 (a.m.)	**ITU Work on TDR**
09:00 – 10:30	Topics: • ITU-T Project on Telecommunication for Disaster Relief (TDR): Mr P-A. Probst, Chairman, ITU-T SG 16 • ITU-R, relevant activities: Mr C. Langtry, Counsellor, ITU-R SG 8 • ITU-D, relevant activities: Mr C. Zavazava, BDT *Session Chair: Mr R. Blane, Deputy Chair ITU-T SG2, UK*

10:30 – 11:00	Coffee-break

Session 4 (a.m.)	**TDR Requirements Definition**
10:00 – 12:30	Topics: • EMTEL Requirements Definition: Mr W. Heidrich, Germany, ETSI • TDR Requirements Definition, Committee T1: Mr A. Webster • TIPHON Requirements analysis: Mr A. Aslam, ETSI • TDR Capability Requirements: Mr L. Homan, Inmarsat Ltd., UK *Session Chair: Mr H. Folts (Rapporteur, ITU-T Q;I/16), NCS, USA*

12:30 – 14:00	Lunch

Session 5 (p.m.)	**TDR Interworking Requirements**
14:00 – 15:30	Topics: • Project MESA: Broadband Telecommunications for PPDR: Mr D. Thompson, TIA, USA • Interworking Public Safety Organizations with Different Technologies: Mr W. Legrand, EADS Telecom, France • Mobile Information and communication Systems in Crisis Situations: Mr J. Panchard, Media Action International / École Polytechnique Fédérale de Lausanne, Suisse • WLAN in Disaster and Emergency Response (WIDER) Project: Mr D. Nielsen, Director, Ericsson Response, Ms C. Mulligan, Ericsson *Session Chair: Mr J. Visser, Chair ITU-T SSG, Canada*

15:30 – 16:00	Coffee-break

Session 6 (p.m.)	**TDR Network Aspects**
16:00 – 17:30	Topics: • TDR Signalling Interface for PSTN: Mr S. Goldman, AG Communication Systems, USA • TDR Traffic Processing in Internet: Mr I. Brown & Mr K. Carlberg, University College London • TDR Network Aspects, Traffic in IPCablecom Networks: Mr A. Webster, NTIA, USA *Session Chair: Mr Y. Hiramatsu, Chair ITU-T SG 11, Japan*

Day 3	**Wednesday 19th February 2003**

Session 7 (a.m.)	**TDR Multimedia Communications**
09:00 – 10:30	Topics: • Multimedia Applications in TDR: Mr S. Pershau, NCS, USA • ETS Support in H.323: Mr G. Thom, Delta Information Systems, Inc, USA • SIP Priority Resources: Mr J. Polk, Cisco Systems, Inc, USA *Session Chair: Mr J. Magill, Vice Chair ITU-T SG16, UK*

10:30 – 11:00   Coffee-break

Session 8 (a.m.)	**TDR Performance and Security Considerations**
11:00 – 12:30	Topics: • Quality of Service for TDR Traffic: Mr J-Y Monfort, Chair ITU-T SG12, France • Authentication of TDR Users: Mr I. Brown, University College London, UK • Security Protection of TDR Traffic: Mr H. Ohno, Emergency Communications Group, Japan • TDR Service Management Interface: Mr H. Folts NCS, USA *Session Chair: Mr J-Y Monfort, Chair ITU-T SG12, France*

12:30 – 14:00 Lunch / **Informal Session:** *13:15-13:45* - "Cell Broadcast Broker System", Mr M. Wood, Cell Alert
Services Corp.

Session 9 (a.m.)	**Panel Discussion of TDR Aspects and Issues**
14:00 – 15:30	Topics: • Synthesis from user perspective • Summaries from technical sessions • Relationship between user requirements and technical perspectives **Selected Presenters from Workshop Sessions** *Session Chair: Mr B. W. Moore, Chair ITU-T SG13, UK*

15:30 – 16:00   Coffee-break

16:00 – 16:30	**Workshop Conclusions & Recommendations**

<center>Annex B:</center>
<center>**Outcome of Discussions & Conclusions**</center>

This Annex contains the outcome of the discussions from various Workshop sessions and Workshop the conclusions are as follows:

B.1 Session 1 – TDR Requirements and Considerations

Session Chair: Mr P-A Probst, Chair ITU-T SG 16, Switzerland

Session 1 aimed to identify institutional users perspectives using a top-down approach. In addition to the identification of the needs of the various organizations involved, a list of requirements was prepared to assist mapping the technical standardization work. The following observations and conclusions were noted:

- The TDR/ETS concepts are under revision in many countries to take into account the new trends (Multimedia, IP-based networks, globality, etc)
- One of the key issues implementing TDR/ETS from the Government perspective is the partnership with the telecom industry and other government levels (cooperation without profit, information exchange, new priorities, funding…)
- When identifying requirements, the role of organisations coordinating civil communications means have to be taken into account. An example is the Civil Emergency Planning in NATO.
- In general, organisations involved in disaster relief operations, depending on their role, have specific communication needs to cover:
  - Coordination and administration within the field and between field and HQs
  - Staff safety
- Many of these organizations operate communications networks for their routine activities.
- In general the problems met during TDR operations are:
  - Lack of interworking among networks and systems (in particular when proprietary systems are used)
  - No priority to establish calls over networks in overload situation or with reduced capabilities,
  - The evolution towards multimedia should be carefully analysed in terms of the quality of the data transmitted "quality is more important than quantity"
  - Cross-border operations of equipments
  - Coverage inside buildings when using satellite systems
  - Problems with power supply
  - Need to rely on several systems
  - High usage cost of services
  - Complicated man-machine interface of terminals
  - Problem of security (protection, integrity and confidentiality of data)

This list of issues has been discussed in the panel (Session 2) and a first list of requirements was prepared.

B.2 Session 2 – Panel discussion

Session Chair: Mr R. Blane, Deputy Chair ITU-T SG2, UK

Objectives:
- Explain the use of telecommunication capabilities for disaster relief operations

- Identify requirements that would be beneficial for future capabilities

Discussions:

Through the discussion, the following two tables were worked out:

Table of Initial User Requirements – Sorted by time

Preparedness	Real Time	Post Disaster
Must be affordable both terminal and usage	Reliable communications between aid workers in the field	
Easy to transport	Free movement of kit – trans-border use of equipment	
Provide voice, data and if possible video		
Priority		
Power source practical, reliable and easily sourced		
Robust, reliable communications		
Security of TDR transmissions/calls		
High probability of completion		
Minimal training requirements		
Equipment should be easy to use		
Mobile equipment to work inside and outside buildings		

Table of Initial User Requirements sorted by Telecommunication Infrastructure Category

Universal connectivity	Security	Availability	Accessibility	Network priority	Mobility	Cost effective
Global access – any place – any time	Security of TDR transmission and calls	Equipment should be easy to use – minimal training required	Priority access	High probability of call completion and adequate QoS	Equipment works inside as well as outside buildings	Affordable/ Low cost
Must offer local, regional and international connectivity.		Must be robust & reliable		QoS for priority communications should scale as network resources become available	Free movement of equipment	
interoperable to maximize communications among all available resources and access points		Power source simple practical e.g. use of car battery			Easy to transport	
		Reliable communications between aid workers in the field				

B.3 Session 3 – ITU Work on TDR

Session Chair: Mr R. Blane, Deputy Chair ITU-T SG2, UK

Objectives:
- To introduce the scope and work of the three sectors of the ITU, the Development Sector (ITU-D), the Radiocommunications Sector (ITU-R), and the Standardisation Sector (ITU-T).
- Elements of existing and ongoing work of the three sectors, which are relevant to the topic of Telecommunications for Disaster Recovery and Mitigation
- Status of co-ordination between the respective Sectors and other bodies with an interest on TDR

Presentations:
- "*ITU-T Project on TDR*", Mr P-A. Probst, Chairman, ITU-T SG 16
- "*ITU-R, relevant activities*", Mr C. Langtry, Counsellor, ITU-R SG 8
- "*ITU-D, relevant activities*", Mr C. Zavazava, BDT

Key aspects from ITU-T Perspective:
- Understand User Requirements
- Identify Regulatory Framework
- Develop a set of Global and compatible Recommendations/Standards
- A need to manage development work on a Project basis

Key aspects from the ITU-R Perspective:
- Production of a report ITU-R M [PPDR] that defines objectives and requirements for operational needs around 2010
- Adoption by ITU-R SG 8 of the Draft New Recommendation (DNR) ITU-R M.[DR.CIRC] on "*Global cross-border circulation of radiocommunication equipment in emergency and disaster relief situations*" which was developed in response to Resolution 645. The text will be circulated for approval by Member States. Approval is expected in May 2003
- Identification of globally/regionally harmonized bands to the extent practicable, for implementation of future advanced solutions for the needs of public protection agencies
- Development of robust, flexible and independent amateur service and amateur satellite service networks.

Key aspects from the ITU-D Perspective:
- Produce new edition of Handbook on Disaster Communications
- Utilise the Global Symposium for Regulators to develop Regulatory Framework
- Close cooperation with Office for the Coordination of Humanitarian Affairs (OCHA); Inter Agency Standing Committee (IASC); Working Group on Emergency Telecommunications (WGETS).

Actions:
- Close cooperation between the **three** Sectors of the ITU to maintain momentum to develop what is needed, while avoiding duplication of effort.

B.4 Session 4 – TDR Requirements Definition

Session Chair: Mr H. Folts (Rapporteur, ITU-T Q;I/16), NCS, USA

Objectives:

- Overview of work underway to define requirements for technical work on TDR capabilities.
- Share views on various aspects of standards development for TDR capabilities
- Establish a common understanding of issues being addressed in the various standards activities.

Presentations :

- *"ETSI EMTEL Requirements Definition"*, Mr W. Heidrich, Germany, ETSI
- *"T1 Committee ETS Technical Report"*, Mr A. Webster, NTIA/ITS, USA
- *"ETSI TIPHON Requirements Analysis"*, Mr A. Aslam, ETSI TIPHON STF 225
- *"TDR Capability Requirements"*, Mr L. Homan, Inmarsat, Ltd, UK, Rapporteur Q3/2

ETSI EMTEL:

- Three areas of telecom capabilities:
    - Citizen to authority – e.g. 112, 911
    - Authority to authority – TDR/ETS
    - Authority to citizen – broadcast alerts

- Work addressed in many technical groups
- Requirements are not "market driven"
- Fixed and mobile nets must cooperate
- Location capability for enhanced 112 services

T1 Committee, N. America:

- Overview of ETS Standards Works – Technical Report (TR)
- Eighteen functional requirements identified
- New TR on traffic priorities for TDR/ETS
- TDR/ETS work in all 8 Technical Committees
- Work is coordinated with ITU-T and other SDOs

ETSI Project TIPHON:

- Extending architecture to support TDR/ETS
- Aspects being addressed:
    - Preferential call/session treatment
    - Security
    - Quality of service
    - Multiple applications
    - Mobility
    - Inter-domain communications

- Developing TDR/ETS requirements, analysis report and systems description specification

TDR Service and Operational Requirements, Q3/2:
- What? A clear and concise description of what is needed and how it should operate
- Why? To create a common understanding and standards, which will permit national systems to operate with each other
- How:
  – Sensitive issues
  – Discuss principles of requirements
  – No disclosure of national implementations
  – Create international framework for bilateral agreements

B.5 Session 5 – TDR Interworking Requirements

Session Chair: Mr J. Visser, Chair ITU-T SSG, Canada

Objectives:
Understand user requirements for interworking:
- There are multiple emergency services organizations...
- That need to be independent of the public infrastructure, yet...
- Must be readily interoperable and fully inter-connectable, plus...
- Be rapidly and simply deployable

Understand where the issues are
- Establishing or restoring coordinated emergency communications when infrastructure is damaged or lost
- Overlapping mandates and how to deal with them
- Identify where technology offers solutions

Where can standards help:
- To ensure that Emergency Telecommunications Services/Telecommunications for Disaster Relief will be able to effectively meet the critical needs when the inevitable emergencies and disasters occur?

Presentations:
- "*Project MESA: Broadband Telecommunications for PPDR*" Mr D. Thompson, TIA, USA
- "*Interworking Public Safety Organizations with Different Technologies*" Mr W. Legrand, EADS Telecom, France
- "*Mobile Information and communication Systems in Crisis Situations*" Mr J. Panchard, Media Action International / École Polytechnique Fédérale de Lausanne, Suisse
- "*WLAN in Disaster and Emergency Response (WIDER) Project*" Mr D. Nielsen, Director, Ericsson Response, Ms C. Mulligan, Ericsson, Sweden

Key requirements identified from the presentations :

- Addressing space: need to be able to "call" into a crisis area as well as to "call" out of it

- Broadcasting: the people affected by a crisis may find receive-only broadcast information very useful

- Interoperability of emergency services telecommunications systems is preferable to interworking

- Emergency services organizations should be free to apply their core competencies: telecommunications experts should support them by supplying their expertise

Actions:

- Determine how best to allocate addresses to enable calling into as well as out of an affected area (ITU-T SG 2)

- Recognize the importance of a basic broadcast capability to support information distribution to the affected population, and plan for such a capability (possible involvement of ITU-T SG 9)

- Focus on interoperability instead of interworking (ITU-T SGs 11 13, 15, 16, 17, SSG)

- Consider how ITU-T might become involved in providing direct telecommunications support to UN agencies providing assistance in emergency and disaster relief situations (Secretary General, Bureau Directors)

B.6 Session 6 – TDR Network Aspects

Session Chair: Mr Y. Hiramatsu, Chair ITU-T SG 11, Japan

Objectives:
Considering the broad scope of TDR such as:

- Quick installation/restoration of the network

- Handling priority calls in case of disaster

- Provision of various information to the user

Also considering the requirements identified:

- E.106

- Draft F.706

Understand the current efforts and future directions on TDR in various types of networks:

- Conventional PSTN/ISDN

- Internet

- IPCablecom Networks

Discuss and identify future action items in standardization of the existing and emerging networks and their relevant protocols

Presentations:

- *"TDR Signalling Interface for PSTN",* Mr S. Goldman, AG Communication Systems, USA

- *"TDR Traffic Processing in Internet",* Mr I. Brown & Mr K. Carlberg, University College London

- *"TDR Network Aspects, Traffic in IPCablecom Networks",* Mr A. Webster, NTIA, USA

As an outcome of Session 6 the following observations were given:

- Learned the current status of work in SG11, IETF and SG9 on TDR (Work has just been started)
- Wait for further requirements to come (coherent requirements desirable)
- Identified the need for coordination between organizations, and interworking between different technologies
- Technical issues on how to implement into protocols TDR requirements (priority, authentication, etc.) for IP (packet) based networks (possible use of application layers suggested by IETF)`

B.7 Session 7 – TDR Multimedia Communications

Session Chair: Mr J. Magill, Vice Chair ITU-T SG16, UK

Objectives:
- Increase understanding of how multimedia communications capabilities can assist in disaster relief operations
- Identify the requirements for multimedia services for TDR
- Review standardization progress to date in providing multimedia capabilities
- Identify new standardization requirements

Presentations:
- "*Multimedia Applications in TDR*", Mr S. Pershau, NCS, USA
- "*ETS Support in H.323*", Mr G. Thom, Delta Information Systems, Inc, USA
- "*SIP Priority Resources*", Mr I. Brown, University College London, UK

Observations:
- Multimedia capabilities are of benefit in disaster situations, e.g.:
  – Voice
  – Data – text, email, file transfer
  – Video
  – Telemetry
  – Graphics
- Many applications were identified, e.g.
  – Teleconferencing
  – Telemedicine
  – Database access
  – Information dissemination
- Some non-voice applications are already in use
- Work already in hand on extensions to multimedia protocols for TDR applications, e.g.
  – H.460.4 for H.323 based communications
  – SIP Resource Priority Header for SIP based communications

- Users should determine media type priorities, and default type, within negotiated/available QoS levels

Actions:
- Continue to feed multimedia requirements into Question I/16
- Specific topics for consideration include:
  - H.323 – SIP interworking, in particular for ETS applications
  - Priorities for information dissemination to regional databases
  - Interworking with broadcast networks
  - Closed user group operation
  - Multicast applications
  - Standardization of terminals for TDR operations

B.8 Session 8 – TDR Performance and Security Considerations

Session Chair: Mr J-Y Monfort, Chair ITU-T SG12, France

Objectives:

The objectives of this session are to draw a picture of the existing and future standards needed for TDR and to give some inputs on the following matters:
- Quality of Service
- User Authentication
- Security
- Network management

All these topics are identified in Draft Recommendation M.3350, planned for consent at next SG 4 meeting, and will be also considered in draft Y.roec and in draft F.706

Presentations:
- "*Quality of Service for TDR Traffic*", Mr J-Y Monfort, Chair ITU-T SG12, France
- "*Authentication of TDR Users*", Mr I. Brown, University College London, UK
- "*Security Protection of TDR Traffic*", Mr H. Ohno, Emergency Communications Group, Japan
- "*TDR Service Management Interface*", Mr H. Folts NCS, USA

Observations:
- A general issue: individual or specific solutions have been deployed for the private networks or internally to domains, but solutions are more complicated for inter-domain situations, and need more work. Such a concern and work is also needed in the case for public Internet communications.
- During the Workshop Sessions, mainly the ones on users requirements, the need of solutions for authentication, priority, QoS and Security was expressed. The presentations given under session 8 did not give a complete answer to these concerns, but identified some ways to progress the work on TDR.
- The relationships between security, priority and authentication on the one hand, and between security and QoS on the other hand, appeared to be important.

QoS for TDR   (J.Y. Monfort)
- QoS shall be end-to end and for the users' benefits.

- No generic solution for TDR, but adaptations could be provided for emergency and disaster relief, by deriving existing of future metrics. QoS Classes could be adapted to the users requirements, and appropriate signalling defined. Some first results have already been obtained under SG 11.

- During the Workshop it appears that the QoS should be applied for all types of services, and not only on voice. The requirements expressed by the users during sessions 1 and 2 should help to define the appropriate "metrics and limits".

Authentication of TDR users   (I. Brown)

- Mechanisms for authentication of TDR users have been presented.

- Blocking points (or problems difficult to be solved) have been identified for inter-domain situations, but it appears that these problems may be difficult (at least long) to solve. (IETF and ISP)

- What could be an intermediate solution? The issue should have to be solved in TDR project.

Security protection of TDR   (H. Ohno)

- A practical application has been presented for IAA ("I Am Alive")

- Collaboration/standards are needed (Q.10/17 & QI/16, Security and TDR projects)

- Collaborations has started with UNHCR and FRC. This workshop could be a good opportunity to increase the collaborations with NGOs.

- The process used for IAA could be extended to other applications.

TDR Service Management interfaces (H. Folts)

- Draft M.3350 (ex M.ETS) has been presented. It is a very useful starting point; even some concerns have been expressed, mainly from the regulatory point of view.

- The aim is to manage TDR across X-interface in real time to support disaster relief operations.

- Facilities and the services provided (as reports, alerts,..) are described and will be a good basis to progress on TDR work

- Here also the interdomain/international interconnection problems have been raised as well as the issue of using the public networks.

B.9 Session 9 – TDR Panel Discussion of TDR Aspects and Issues

Objectives:

- To assess the conclusions of each Session of the Workshop
- To agree on future actions and how they will be progressed

Observations form the closing panel session:

The objective of the TDR work is to Establish technical standards that are <u>responsive</u> to disaster relief requirements

Basic TDR Requirements: High probability of completion for disaster relief communications:

- Access to service
- Establishment of sessions
- Routing to destination
- Delivery to terminal
- Continuation of session to completion

Interworking:

- Enable interworking of TDR/ETS capabilities in public networks with dedicated disaster relief and public safety communication systems

Applications for Consideration:

- Telephony
- Messaging
- Database access
- Telemedicine
  – Video for medical procedures
  – Telemetry of vital signs
- Victim registry database (registry & search)
- File transfer
- Interactive white board
- Broadcast video
- Telemetry of local environment conditions

TDR Security:

- Rapid authentication of authorized TDR/ETS users
- Protection of TDR/ETS traffic
  – Interference
  – Spoofing
  – Masquerading
  – Denial of service
  – Eavesdropping (selected traffic)
  – Non-traceability (selected traffic)

Quality of Service:

- Best quality of service - when sufficient telecom resources are available
- Best effort - when resources become severely limited, enable emergency communications to continue, even when degraded

Service Management:

- Real-time interaction between relief operations agent and telecom service provider
- Coordinate provisioning and status of telecommunication capabilities to support disaster relief operations during a crisis situation

Technical considerations → solutions being sought:

- Industry networking standards that fulfill TDR/ETS requirements
- Enhance TDR/ETS operations with value-added capabilities
  – Operational
  – Policy
  – Legal
  – Regulatory

Challenge:

- Applying technology effectively to provide useful telecommunication capabilities that will fulfil real operational requirements for disaster relief operations

Actions:

- Creation of a steering committee which facilitates the "Partnership" between Member States, Private Sector, Government Organisations and Non-Government Organisations, to undertake this work.

B.10 Conclusions

- The TDR Workshop has created an excellent opportunity to improve the understanding of the role and requirements of the major players involved in TDR operations
- A first insight into the views and concept of Government to support TDR operations has been achieved. However, it was recognised that further contributions are needed on this topic.
- It has been recognised that the users needs depend on several dimensions like time, location, role of the entities involved, etc.
- Both from the Government perspective and from the industry and operators, the mapping between requirements and the technical standardisation work needs to be improved.
- In the standardisation area many SDOs and industrial Forum/Consortium are active. The coordination and harmonization of standards has been recognised as one of the key issue.
- From the technical sessions, a number of items have been identified for inclusion into the work-programme of the relevant ITU-T Study Groups.
- The need to further develop the requirements framework and the mapping with the technical standardisation work plan was recognised.
- To develop and maintain the links among the partners involved in TDR operations, the Workshop supported the creation of a Partnership Co-ordination Panel (PNP) to help coordinate the TDR standardisation work (see Annex C).

The idea of a second TDR workshop in mid 2004 was endorsed, with views to provide an overview of the progress accomplished.

<div align="center">

Annex C:
Action Plan
Additional form of coordination and cooperation on TDR

TDR Partnership Co-ordination Panel

</div>

As an outcome of the Workshop on TDR, the creation of an information exchange platform named TDR-PCP (Telecommunication for Disaster Relief and Mitigation Partnership Co-ordination Panel) was suggested by the Workshop conclusions and after review by its Cooperation Coordination Group adopted by TSAG.

The Draft Terms of Reference are as follows:

- Monitor the progress of the technical standardisation work in general and in particular its mapping with the requirements of the different categories of users
- Address coordination issues between the partners involved
- Develop and maintain the links with entities not traditionally involved in the development of standards
- Inform TSAG on the progress accomplished
  NB: the need to coordinate the activities across all three sectors may require some communications to RAG and TDAG

- The Partnership Co-ordination Panel will operate as follows:
  - Periodic Progress reports
  - Work mainly by e-mail
  - Possibility of a maximum of two physical meetings per year

- Members of this PCP would be (non exhaustive list):
  - ITU-T: SG2, SG16, others on request, TSB
    ITU-R: SG8, others on request, BR
    ITU-D: SG1, BDT
    SDOs: ISO/IEC, ETSI, T1, APT, IETF, others TBD
  - Intergovernmental Organizations: UN-OCHA, UNHCR, UNICEF, WFP, WHO, others TBD
  - NGOs: IFRC, ICRC, TSF, others TBD
  - Industry Forum and Consortium: MESA, others TBD

<div align="center">

</div>

<div align="center">

Annex D:
Workshop Evaluation

</div>

Of eighty-three participants, 62.6 % filled in the evaluation form. From the respondents, 57.6% indicated an overall ranking for the Workshop as "satisfactory", 38.4% as "very satisfactory" and 3.8% as "neutral". The average overall ranking of the Workshop was 4.3.

The average rankings of the various sessions were as follows:

1= very dissatisfied, 2= dissatisfied, 3= neutral, 4= satisfied, 5= very satisfied	Average Ranking
Sessions	
Session 1: TDR Requirements & Considerations & Session 1 (Continue)	4.1
Session 2: Panel discussion	4.0
Session 3: ITU Work on TDR	3.8
Session 4: TDR Requirements Definition	3.9
Session 5: TDR Interworking Requirement	3.9
Session 6: TDR Network Aspects	4.0
Session 7: TDR Multimedia Communications	3.7
Session 8: TDR Performance and Security Considerations	3.7
Session 9: Panel Discussion of TDR Aspects and Issues	3.6

The average ranking of the various sessions tended to a "satisfactory" result. The average ranking of the Poster exhibition was 3.4.

According to the feedback received, the presentations given at this Workshop were satisfactory and interesting, however some attendees expressed a desire for more regionally classified information to be given. Also, classifications of disasters by timeline, market, user and type of communications would be desirable. The need to promote ITU activities in this field towards actors, such as Rescue Services, Firemen, Medical Services who could bring their requirements even for day-to-day activity was stressed.
Most of the respondents indicated an interest to have a second TDR Workshop in one-year time.

Annex E:
Workshop Steering Committee

Mr Roy Blane (UK)
Mr Harold Folts (USA)
Mr Les Homan (UK)
Mr Yukio Hiramatsu (Japan)
Mr Chae-Sub Lee (Korea)
Mr Brian Moore (UK)
Mr John Magill (UK)
Mr Jean-Yves Monfort (France)
Mr Pierre-André Probst (Switzerland)
Mr John Visser (Canada)

Mr Vladimir Androuchko (ITU/TSB)
Mr Simão Campos-Neto (ITU/TSB)
Mr Stephen Geis (ITU/IS)
Mr Georges Sebek (ITU/TSB)

———————