



INTERNATIONAL TELECOMMUNICATION UNION

**TELECOMMUNICATION
DEVELOPMENT BUREAU**
ITU-D STUDY GROUPS

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SECOND MEETING OF STUDY GROUP 1: GENEVA, 30 AUGUST - 3 SEPTEMBER 1999
SECOND MEETING OF STUDY GROUP 2: GENEVA, 6 - 10 SEPTEMBER 1999

FOR ACTION

Question 16/2: Preparation of Handbooks for developing countries

STUDY GROUP 2

SOURCE: INTERNATIONAL AMATEUR RADIO UNION (IARU)

TITLE: PROPOSAL FOR A HANDBOOK ON DISASTER COMMUNICATIONS

Action required: The Rapporteur's Group is invited to express its opinion on the paper.

Abstract: The paper proposes a preliminary outline of the Handbook for disaster communications, as well as the working methods and a schedule for completion of the Handbook.

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1 Introduction

The Handbook will explain technical, operational and regulatory aspects of disaster communications. Various communications applications for disaster communications of interest to developed and developing countries will be defined. The Handbook is intended to be a useful reference for a wide audience, including managers and regulators of the radio-frequency spectrum, engineers, students and potential users of disaster communications and a tool for training programmes/courses. A preliminary outline of the Handbook is provided in Annex 1.

2 Working methods for completion of Handbook

2.1 Handbook group

A Handbook group will be established, consisting of a Principal Rapporteur and Section Rapporteurs who will draft and review elements of the various sections of the Handbook. The Rapporteurs listed below will be responsible for ensuring timely completion of overall text and are the central contact persons for the Handbook work. Section Rapporteurs (Table 1) will help ensure that their respective section is properly addressed. They should also contact relevant persons and refer to relevant documentation for the inclusion of text in the Disaster Communications Handbook. The Handbook group will be open to text contributors of various sections throughout the drafting and review process, and all Member States and Sector Members are encouraged to contribute to the Handbook group. New participants may join the group by subscribing to the email reflector as described in Section 2.2.

2.2 Electronic document handling (EDH)

Two EDH capabilities will need to be created by the Secretariat of the ITU Telecommunication Development Bureau (BDT) to facilitate the work of the Handbook group: an email reflector and a Disaster Communications Handbook bulletin board. The email reflector will relay messages sent by one participant in the Handbook group to all other current participants, to enable efficient circulation of all correspondence (including new draft elements for the Handbook). Thus, all parties interested in participating in the Handbook group in any capacity (drafting contributions, review of draft elements or monitoring of progress) should subscribe to and utilise the email reflector as follows:

- a) The email reflector has the following address:
XXXXXX
- b) If you wish to **subscribe to the email reflector** (i.e., in order to participate in the Handbook group), send an email message to:
With the following message:
subscribe dchbook + your email address
For example, using the Handbook coordinator's name for illustrative purposes:
XXXXX

- c) If you wish to be removed from the email reflector, repeat step b) sending the following message:
unsubscribe xxxxx + your email address
- d) If you wish to **modify your email address** as contained in the email reflector, first perform step c using your old email address (unsubscribe), then perform step b using your new email address (subscribe again).
- e) Any additions or modifications to the email reflector list must be approved by the Secretariat, and so, these actions will not occur instantaneously.
- f) To broadcast messages to the Disaster Communications Handbook group members
- g) after you have subscribed to the email reflector, simply send your message to the email address listed in step a (Messages of a more private nature (e.g., questions and suggestions) may be sent directly to the responsible Rapporteur and are most welcome).

In order to make all relevant correspondence and current draft elements of the Handbook conveniently available to members of the Handbook group, ITU-D Study Group 2 (SG2) requested that the ITU Secretariat establish a Disaster Communications Handbook bulletin board that is accessible through the ITU website (xxxxxxxxxxxxxxxx). Registered TIES users will have access to this bulletin board from the ITU web page for "Disaster Communications" by clicking the cursor on the "Disaster Communications Handbook" button on the screen. This SG2 page is at the following Internet address (accessible directly or via the main ITU page):

[http://www.itu.int/xxxxxxxx/handbook/index. Html](http://www.itu.int/xxxxxxxx/handbook/index.Html)

2.3 Formatting contributions

The Disaster Communications Handbook group is using Word 6.0 for Windows 95 as its standard format for draft text elements. Draft elements should be submitted in that format, if possible, as MIME encoded attachments to an email message sent to the email reflector. Other formats may be used, and these will be converted to the standard format before being posted on the Disaster Communications Handbook bulletin board. The text formatting style can be seen in draft elements available from the bulletin board, but any text style is acceptable. A uniform style will be incorporated when the draft Handbook elements are integrated to form a complete Handbook text.

3 Schedule for completion of the Handbook

The schedule delineated in Table 2 was adopted for the completion of the Handbook by XX Month 1999.

TABLE 1

Disaster Communications Handbook Rapporteurs and Section Rapporteur

Disaster Communications Handbook Rapporteurs:

Mr. Hans Zimmermann	Tel: +41 22 917 3516
Principal Rapporteur	Fax: +41 22 917 0208
	Email: Hans.Zimmermann@ties.itu.int

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		Fax: xxx xxx xxxx
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Section Y:	Rapporteur	Tel: xxx xxx xxxx
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		Email: xxx xxx xxxx

Section Z:	Rapporteur	Tel: xxx xxx xxxx
		Fax: xxx xxx xxxx
		Email: xxx xxx xxxx

Different contributors should send materials on their own system or on regulatory issues to the above responsible Rapporteurs and make text available through the email reflector.

TABLE 2

Schedule for completion of the Handbook

Action	Deadline	By whom
Section Rapporteur volunteers to confirm drafting commitments (email Name for confirmation)	XX Month 1999	Section Rapporteurs
Reporting of volunteers' commitments to the Principal Rapporteur (email through Disaster Communications Handbook reflector)	XX Month 1999	Principal Rapporteur
Send coordinating statements to appropriate ITU-R and ITU-T study groups requesting cooperation	XX Month 1999	Principal Rapporteur
Contributions 1 st draft	XX Month 2000	Section Rapporteurs + Contributors
Distribution of 1 st draft for review (meeting)	[Meeting XX-XX Month or early Month] to be confirmed by ITU-D circular	Principal Rapporteur
Comments on 1 st draft (and additional contributions)	XX Month 2000	Section Rapporteurs + Contributors
Distribution of complete draft final text for review	XX Month 2000	Principal Rapporteur
Comments on draft final text (possible meeting or correspondence)	XX Month 2000	Section Rapporteurs + Contributors
Final text to ITU for publishing	XX Month 2000	Principal Rapporteur
Inform Mr. Kisrawi of completion of text	XX Month 2000	Principal Rapporteur

4 Budget for completion of the Handbook (TBD)

The Principal Rapporteur and Section Rapporteurs will draft and review a cost estimate and budget for the completion of a Disaster Communications Handbook.

ANNEX 1

Preliminary Draft Outline
Disaster Communications Handbook
Policy Manual

DISASTER COMMUNICATIONS POLICY MANUAL

Foreword and table of contents

Acknowledgements

Acronyms

1 Introduction

1.1 Historical perspectives: the Way to the Tampere Convention

1.2 Overview of the policy manual

1.2.1 The Problem

1.2.2 Telecommunications in disaster situations

1.2.2.1 The need for telecommunications

- to provide data for emergency management systems

- to provide those affected by disasters with communication as a comfort

- to provide safety and security for relief personnel

1.2.3 The Regulatory Environment

- Telecommunications are politically sensitive and highly regulated

- Existing national and international frameworks

1.2.4 The practical application of existing regulations

- by governments/authorities

- by users (humanitarian institutions)

2 Relevant ITU PP, WRC, WTDC Resolutions

2.1 Disaster Communications

Resolution Number 7

World Telecommunication Development Conference (Buenos Aires, 1994) (WTDC-94)

2.3 ITU Plenipotentiary Conference (Kyoto, 1994)

Telecommunications for Disaster Mitigation and Disaster Relief Operations

Resolution Number 36

- 2.4 International Amateur Radio Permit (IARP)
OAS General Assembly (Montrouis 1995)
- 2.5 Convention on the Provision of Telecommunications Resources for Disaster Mitigation and Relief Operations

UN Department of Humanitarian Affairs

Intergovernmental Conference on Emergency Telecommunications (Tampere, 1998) (ICET 98)
- 2.6 WRC 644 as replacement for Res. 640.
- 3 ITU-R/T/D Recommendations
- 4 Public/social interest and standards during disasters
- 5 Policy matters regarding spectrum management of disaster communications
- 5.1 The nature of spectrum management of disaster communications
- 5.2 Reasons for regulating the spectrum for disaster communications
- 5.3 Regulatory provisions for spectrum management
- 6 Basic instrument for disaster communications policy
- 7 National constitutional matters
-Examples: Canada, USA, and others
- 7.1 Legal review of disaster telecommunications legislation with the constitution
- 7.2 National regulatory agency, customs, finance, etc
- 7.2.1 Need to have necessary provisions in each agency's laws, rules, regulations, etc.
- 8 Possible contents of a disaster communications legislation
- 8.1 Objectives
- 8.2 Delegation of tasks and authority to a national regulatory agency
- 8.3 Classification of emergency telecommunications services and establishing basic concepts and policies to govern them during emergencies
- 8.4 Rules and regulations
- 8.5 Administrative procedures
- 8.6 Enforcement provisions
- 8.7 Financial provisions
- 9 International disaster planning
- 9.1 Agencies/organisations
- 9.1.1 The United Nations Office for the Coordination of Humanitarian Affairs (OCHA)
-Structure
-Coordinating mechanisms

- 9.2 International disaster planning
- 9.3 Regional disaster planning
- 9.4 National disaster Planning
- 9.5 State/provincial planning
- 9.6 Model plans, MoUs
- 10 Role of the news media
- 10.1 Additional authorisations required but not specifically mentioned in Tampere Convention
- 10.2 Additional licenses possibly required for broadcasting beyond a regular radio license, i.e. a “media authorisation.”

- Annex I - Glossary and list of abbreviations
- Annex II - Relevant ITU PP, WRC, WTDC Resolutions
- Annex III - The Tampere Convention
- Annex IV - ITU bibliography

ANNEX 2

Preliminary Draft Outline
Disaster Communications Handbook
Operations Manual

DISASTER COMMUNICATIONS OPERATIONS MANUAL

Foreword and table of contents

Acknowledgements

Acronyms

1 Introduction

1.1 Purpose and scope

1.2 Organisation of the Handbook

2 Disaster communications policy & legislation

2.1 Authority

2.2 National Regulatory Agency

2.3 Other Agencies

2.4 Rules and regulations

2.5 Public participation

3 National and international organisations

3.1 United Nations (UN)

3.2 International Telecommunication Union (ITU)

3.3 International Federation of the Red Cross and Red Crescent Societies (IFRC)

3.4 International Committee of the Red Cross (ICRC)

3.3 Governmental organisations

-National rescue services

-National communications services

3.4 Non-governmental organisations

(such as) -International Amateur Radio Union (IARU)

4 Regional organisations including humanitarian and regional telecommunications organisations

4.1 Organisation of American States (OAS)/Inter-American Telecommunication Commission (CITEL)

- 4.2 Caribbean Association of National Telecommunication Organisations (CANTO)
- 4.3 European Conference of Postal and Telecommunications Administrations (CEPT)
- 4.4 Conference of Postal and Telecommunications Administrations of Central Africa (CAPTAC)
- 4.5 Pacific Telecommunication Commission (PTC)
- 4.6 Asian-Pacific Telecommunity (APT)
- 4.7 Pan American Health Organisation (PAHO)
- 4.8 Caribbean Disaster Emergency Response Agency (CDERA)
- 4 Administrative procedures
 - 4.1 General
 - 4.2 Organisational Matters
- 5 Disaster Communications
 - 5.1 Range
 - 5.1.1 Local/tactical
 - 5.1.2 Regional
 - 5.1.3 Long distance/international links
 - 5.2 Carriers
 - 5.2.1 Public networks (POTS)
 - 5.2.2 Private networks
 - 5.2.3 Amateur Service
 - 5.2.4 Marine
 - 5.2.5 Aeronautical
 - 5.2.6 Internet
 - 5.2.7 Military/Civil Defence
 - 5.3 Equipment
 - 5.3.1 HF
 - 5.3.2 VHF/UHF
 - 5.3.3 Terrestrial
 - 5.3.4 GMPCS
 - 5.3.5 Data networks
 - 5.4 Modes of service
 - 5.4.1 Voice
 - 5.4.2 Facsimile
 - 5.4.3 Data
 - 5.4.4 Images

5.5 Protocols

5.5.1 CW

5.5.2 SITOR

5.5.3 PACTOR

5.5.4 Packet - APRS

5.5.5 Internet

5.5.6 LAN/WAN

5.6 Power

5.6.1 Commercial

5.6.2 Tactical

5.6.3 Solar

5.6.4 Wind

6 GNSS (GPS, GLONASS)

7 Combat Survivor Evader Locator (CSEL)

8 Disaster planning

8.1 Introduction/purpose

8.2 Emergency Planning

- Critical communications requirements

- Urban vs. rural requirements

- High-volume message traffic with different levels of precedence

- Long delays for access

- Delayed replies

- Equipment outages at key nodes

- Need for agencies to communicate with incompatible equipment

- Need to communicate beyond normal operating range of equipment

- Need to relay traffic

- Voice communications plus alternates:

- Volume data (teletypewriter, high-speed packet, fax)
- CW (when conditions are poor)
- Encryption and privacy for sensitive information
- TV (mobile, portable, aeronautical, marine)
- Telephone interface

8.2.1 Written guide/SOP

8.2.2 Primary responsibility to provide communications

- 8.2.3 Training and exercises to ensure rapid response when needed
- 8.2.4 Agencies served
- 8.3 Activating the plan
 - 8.3.1 Authority, method, agencies to be notified
 - 8.3.2 Mobilisation procedures
 - 8.3.3 Duties and Responsibilities
 - 8.3.4 Insurance, liability
- 8.4 Plans and operations
 - 8.4.1 International disaster planning
 - 8.4.2 Regional disaster planning
 - 8.4.3 National disaster planning
 - 8.4.4 State/provincial planning
 - 8.4.5 Model plans, MoUs
 - Red Cross
 - National Emergency Management Agency
 - National Communications System
 - Public Safety
 - National Weather Service
 - MoU Examples (New Zealand, Belgium)
 - Case Studies
 - Sri Lanka
 - Bangladesh
 - Caribbean
 - USA
 - 8.4.6 Exercises, tests, alerts
- 9 Radio amateurs as human resources in emergency telecoms, the people, not only their networks
 - 9.1 Range (Short, medium, and long-haul)
 - 9.2 Tools (HF, VHF, UHF, AMSAT, ARPS)
 - 9.3 Modes of amateur communications (voice, fax, data, images)
 - 9.4 Protocols (CW, ATV, packet, AMTOR, PACTOR, G-TOR, CLOVER, PSK 31, etc.)
 - 9.5 Networks (traffic, emergency, weather, other)
 - 9.6 Amateur Radio Emergency Service (ARES) and ARES Mutual Assistance Team (ARES MAT) Concept

- 9.7 Emergency Coordinator
- 9.8 Procedures
- 9.9 Training
- 9.10 Regular practice, drills and tests
- 9.11 Field Day type event
- 9.12 Simulated Emergency Tests
- 9.13 Net operator training
- 9.14 Methods of handling information
 - 9.14.1 Traffic
 - A National Traffic System
 - Tactical traffic
 - Formal message traffic
 - Packet radio as a tool for message handling
 - Image communications
 - Amateur television with portable fast-scan television
- 9.15 Amateur Radio Groups
 - 9.15.1 Amateur Radio Emergency Service (ARES)
 - 9.15.2 Radio Amateur Civil Emergency Service (RACES)
- 9.16 Public Service Events
- 9.17 Natural disasters
 - 9.17.1 Health & welfare traffic
 - 9.17.2 Property damage survey
 - 9.17.3 Accidents and hazards
 - 9.17.4 Working with Public Safety Agencies
 - Assisting the police
 - Search and Rescue
 - Hospital communications
 - Toxic-chemical spills and hazardous materials

Annex I - Glossary and list of abbreviations

Annex II - Amateur Radio Emergency Service (ARES) and ARES Mutual Assistance Team (ARESMAT) Concept
Radio Amateur Civil Emergency Service (RACES)

Annex III - Simulated Emergency Tests
Annex IV - ITU bibliography

ANNEX I

Glossary and list of abbreviations
(compile and define specialised terms used in the Handbook)

ANNEX II

Relevant ITU PP, WRC, WTDC Resolutions

1. Communications in Emergency Situations
Resolution PTC.III/Res.5 (II-93)
2. Disaster Communications
Resolution Number 7
World Telecommunication Development Conference (Buenos Aires, 1994)
(WTDC-94)
3. ITU Plenipotentiary Conference (Kyoto, 1994)
Telecommunications for Disaster Mitigation and Disaster Relief Operations
Resolution Number 36
4. The United Nations
Office for the Coordination of Humanitarian Affairs (OCHA)
5. International Amateur Radio Permit (IARP)
OAS General Assembly (Montrouis, 1995)
6. Convention on the Provision of Telecommunications Resources for Disaster Mitigation And Relief Operations

UN Department of Humanitarian Affairs

Intergovernmental Conference on Emergency Telecommunications (Tampere, 1998) (ICET 98)
7. WRC 644 as replacement for Res. 640.

ANNEX III

Simulated Emergency Tests

ANNEX IV

ITU bibliography

(list relevant references to other ITU publications)
