International Telecommunication Union

ITU-R

Radiocommunication Sector of ITU

Recommendation ITU-R M.1854-1

(01/2012)

Use of mobile-satellite service in disaster response and relief

M Series

Mobile, radiodetermination, amateur and related satellite services

Foreword

The role of the Radiocommunication Sector is to ensure the rational, equitable, efficient and economical use of the radio-frequency spectrum by all radiocommunication services, including satellite services, and carry out studies without limit of frequency range on the basis of which Recommendations are adopted.

The regulatory and policy functions of the Radiocommunication Sector are performed by World and Regional Radiocommunication Conferences and Radiocommunication Assemblies supported by Study Groups.

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Series	Title
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S	Fixed-satellite service
SA	Space applications and meteorology
SF	Frequency sharing and coordination between fixed-satellite and fixed service systems
SM	Spectrum management
SNG	Satellite news gathering
TF	Time signals and frequency standards emissions
V	Vocabulary and related subjects

Note: *This ITU-R Recommendation was approved in English under the procedure detailed in Resolution ITU-R 1.*

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RECOMMENDATION ITU-R M.1854-1

Use of mobile-satellite service in disaster response and relief

(Questions ITU-R 286/4 and ITU-R 227/4)

(2010-2012)

Scope

This Recommendation provides information about the range of frequencies used by mobile-satellite service (MSS) systems that could be identified by Member States for early warning and disaster relief telecommunications in accordance with Resolutions ITU-R 53 (RA-07), ITU-R 55 (RA-07), 644 (Rev. WRC-07), 646 (WRC-03) and 647 (WRC-07).

The ITU Radiocommunication Assembly,

considering

a) that a typical impact of disaster events is the loss of the local terrestrial-based telecommunication infrastructure;

b) that the location and time of occurrence of disaster events is unpredictable;

c) that, in view of their independence from the local infrastructure, wide-area coverage, and ease of deployment, mobile-satellite services (MSS) can provide immediate means of telecommunication to help in contacting the public and relief operations;

d) that reliable and rapid deployment of telecommunication equipment is essential for relief operations in the event of natural disasters and similar emergencies;

e) that the unpredictability of the location and time of occurrence of a disaster event implies the need for pre-planning of spectrum and equipment to be used;

f) that mobile-satellite terminals and ancillary equipment may be ubiquitously deployed and at times may represent the only viable solution to provide emergency telecommunication services for relief operations, and authorization may be required from the administrations on spectrum to be used;

g) that such equipment might perform a variety of functions including, but not limited to, voice and data communication, field reporting, data collection, position information and image transmission,

recognizing

a) that Resolution 136 (Antalya, 2006) of the Plenipotentiary Conference on the use of telecommunications/information and communication technologies for monitoring and managing emergency and disaster situation for early warning, prediction, mitigation and relief resolved mainly to instruct the Directors of the Bureaux:

– to continue their technical studies in order to develop technical and operational implementation, as necessary, of advanced solutions to meet the needs of public protection and disaster relief telecommunications/ICT;

– to support the development of robust, comprehensive, all-hazards emergency and disaster early warning and relief systems, at national, regional and international levels;

b) Resolution ITU-R 53 (RA-2007) on the use of radiocommunications in disaster response and relief, which resolved "that, given the importance of the effective use of the radio-frequency spectrum for radiocommunications in disaster situations, the concerned ITU-R study groups undertake studies and develop guidelines related to the management of radiocommunications in disaster prediction, detection, mitigation and relief collaboratively and cooperatively within ITU and with organizations external to the Union";

c) Resolution ITU-R 55 (RA-2007) on ITU studies for disaster prediction, detecting, mitigation and relief which resolves to invite all study groups to take into consideration the scope of ongoing studies/activities, as outlined in Annex 1 attached to this Resolution, based on clear scopes of each study group prior to the Radio Assembly – in particular former Study Groups SG 4 and SG 8 – referencing both FSS and MSS, as called for in Questions ITU-R 286/4 (former ITU-R 209-3/8) and ITU-R 227/4 (former ITU-R 227/8);

d) Resolution 644 (Rev.WRC-07) on radiocommunication resources for early warning disaster mitigation and relief operations, Resolution 646 (WRC-03) on spectrum for public protection and disaster relief, and Resolution 647 (WRC-07) on spectrum management guidelines for emergency and disaster relief radiocommunications, which clarifies the objectives and the work to be carried out by the ITU Radiocommunication Sector (ITU-R) on the issues relevant to these Resolutions, to accelerate the studies, to prevent overlaps, and to collaborate with relevant partners in this domain (see http://www.itu.int/ITU-R/space/res647/index.asp);

e) the ITU Global Forum on effective use of telecommunications/ICT for disaster management and the telecommunications for Disaster Relief and Mitigation – Partnership Coordination Panel (PCP-TDR), concentrating on identification of global and/or regional frequency bands/ranges for emergency and disaster relief, when undertaking their national planning and to communicate this information to the Bureau, as well as to invite ITU-R to conduct studies as necessary, and as a matter of urgency, in support of the establishment of appropriate spectrum management guidelines in emergency and disaster relief operations;

f) the adoption by ITU-T in October 2007 of ITU-T Recommendation X.1303 on the common alerting protocol (CAP1.1) and its implementation, which is a simple and general format exchanging all-hazard emergency alerts and public warning over all kinds of networks;

g) the successful results of the ITU Global Forum on effective use of telecommunications/ICT for disaster management: Saving Lives, which took place in Geneva, 10-12 December 2007, and resulted in launching two important initiatives, the ITU framework of cooperation in emergencies (IFCE) and ITU Network of Volunteers for Emergency Telecommunications (VET), and the establishment by the ITU Secretary-General of the High-Level Panel for Emergency Telecommunications (for more details, see the Compendium of ITU's work on Emergency Telecommunications, edition 2007) in which a number of bilateral partnership agreements and memoranda of understanding were also signed between ITU and relevant partners, including four satellite operators/service providers; TerreStar, Iridium, ICO Global and Vizada, in addition to the two operators who signed such agreements prior to this Global Forum (Inmarsat and Thuraya),

noting

a) that the characteristics, operational aspects and ground segment deployment considerations for MSS systems are detailed in the ITU-R mobile-satellite service Handbook;

b) that several MSS system operators have already provided valuable assistance in the area of disaster relief and management, including the provision of equipment and air-time, through partnership agreements with ITU;

c) that some examples of MSS systems which can provide disaster-related telecommunications are described in Report ITU-R M.2149;

d) that there are agreements between ITU and MSS satellite operators/service providers on the use of MSS systems for disaster-related telecommunications (see http://www.itu.int/en/ITU-D/Emergency-Telecommunications/Pages/PartneringforDisasterReduction.aspx);

e) that Recommendation ITU-R S.1001 contains information on the use of systems in the fixed-satellite service in the event of natural disasters and similar emergencies for warning and relief operations;

f) the activities of the ITU Telecommunication Development Bureau (BDT) as coordinator in the management and field operations of satellite telecommunications for disasters and emergencies among the ITU secretariats,

recommends

1 that administrations are encouraged to consider the global and/or regional frequency bands/ranges for emergency and disaster relief in their national planning identified in Table 1, and advise the Radiocommunication Bureau of this information when implementing Resolution 647 (WRC-07);

TABLE 1

			Downlink (MHz)[2]		**Uplink (MHz)[2]**	
System[1]	**Type**	**Service Area**	**From**	**To**	**From**	**To**
ACeS	GSO	Parts of Region 3	1 525.0	1 559.0	1 626.5	1 660.5
AUSSAT	GSO	Australia	1 545.0	1 559.0	1 646.5	1 660.5
DBSD North America	GSO	North America	2 180.0	2 190.0	2 010.0	2 020.0
Globalstar	Non-GSO	Global	2 483.5	2 500.0	1 610.0	1 621.35
Inmarsat	GSO	Global	1 525.0	1 559.0	1 626.5	1660.5
Iridium	Non-GSO	Global	1 617.775	1 626.5	1 617.775	1 626.5
SkyTerra	GSO	North and Central America	1 525.0	1 559.0	1 626.5	1 660.5
Solaris Mobile	GSO	Parts of Region 1	2 170[3]	2 200	1 980[3]	2 010
Terrestar	GSO	North America	2 190.0	2 200.0	2 000.0	2 010.0
Thuraya	GSO	Regions 1 and 3	1 525.0	1 559.0	1 626.5	1 660.5

NOTE 1 – For further details on these MSS systems refer to Report ITU-R M.2149.

NOTE 2 – There may be other MSS systems in the future, in these or other frequency bands.

NOTE 3 – Within the European Union, Solaris Mobile operates only in the bands 2 185-2 200 MHz and 1 995-2 010 MHz.

2 that operators of MSS systems are invited to use the common alerting protocol (CAP1.1) described in ITU-T Recommendation X.1303 and to follow up on the developments in this matter;

3 that the use of MSS capabilities for emergencies and disaster relief operations should be pre-planned between administrations and MSS operators/service providers to ensure prompt availability of MSS services in the event of disaster, taking account of the Resolutions referred to in *recognizing* d);

4 that operators of MSS systems are encouraged to continue working with ITU in relation to emergencies and disaster relief.